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ENCYCLOPAEDIA SEXUALIS

A Comprehensive Encyclopaedia- Dictionary of the Sexual Sciences

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IWAN BLOCH
[1872–1922]

and

MAGNUS HIRSCHFELD
[1868–1935]

In editing the *ENCYCLOPAEDIA SEXUALIS*, we have kept before us the following texts:

Iwan Bloch: *“Truth is always a good thing, even truth regarding the sexual life.”*

Magnus Hirschfeld: *“Sex and love are as old as mankind, but the science of sex and love, sexology, is the youngest of all sciences.”*

Doctors Bloch and Hirschfeld were two of the foremost creators of sexual science; their names appear frequently in this volume, and they would have rejoiced to see this first American *ENCYCLOPAEDIA SEXUALIS*. Bloch died in his mental prime, before the *ENCYCLOPAEDIA* was conceived; Hirschfeld died in exile, after writing for the *ENCYCLOPAEDIA* his autobiographical sketch and his last important essay.

Both were victims of a nation's ingratitude; both accomplished work of enduring value for the welfare of the human race. Their books were burnt and are not permitted to be read in their native land; where liberty still survives, these books are held in honor. To the memory of our departed friends we dedicate the *ENCYCLOPAEDIA SEXUALIS*.

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Head of Department of English, College of Paterson; formerly Assistant Professor of English, Bucknell University. Editor: William Macmichael's *The Gold-Headed Cane*. Author: *English Shakespearian Criticism in the Eighteenth Century*.
- W.J.R.** WILLIAM JOSEPHUS ROBINSON, M.D. New York, N. Y.
Editor: *The Medical Critic and Guide*; formerly Editor, *American Journal of Urology and Sexology*; Editor of the Works of Abraham Jacobi (Collectanea Jacobi), 1909. Author: *Never-Told Tales*, 1908; *Sexual Impotence*, 1913; *Birth Control*, 1915; *Treatment of Gonorrhoea*, 1915; *Woman, Her Sex and Love Life*, 1917; *The Oldest Profession in the World and Its Future*, 1930.
- A.J.E.*** ABRAHAM JACOB RONGY, M.D., F.A.C.S. New York, N. Y.
Attending Gynecologist, Lebanon Hospital; Chief Surgeon, Zion Hospital, 1910-16. One of the founders of Jewish Maternity Hospital. Author: *Abortion, Legal or Illegal*, 1933.

- E.R.** **ETTIE ROUT** London, England
Author: *Safe Marriage*, 1921; *The Morality of Birth Control*, 1925; *Maori Symbolism*, 1926. In charge of venereal prophylaxis in Egypt, and later in France, during the War of 1914-18.
- J.S.** **JACOB SANDERS, M.D.** The Hague, Holland
Lecturer on Hygiene, University of Amsterdam; Director of the Department for the Investigation of Inheritance, Dutch Institute of Human Genetics and Race Biology. Published studies on albinos, epileptic twins, homosexual twins, triplets, and on the castration of sexual abnormals in the Netherlands.
- M.S.*** **MARGARET SANGER** New York, N. Y.
President, American Birth Control League; Organizer, First World Population Conference (Geneva, 1927); Chairman, National Committee for Federal Legislation on Birth Control. Editor: *Birth Control Review*, 1917-28. Author: *The Case for Birth Control*, 1917; *The Pivot of Civilization*, 1922; *My Fight for Birth Control*, 1931.
- E.S.** **EDGAR SCHMIEDELER, Ph.D., O.S.B.** Washington, D. C.
Instructor in Sociology, Catholic University of America; Professor of Dogmatic Theology, St. Benedict's Seminary, Atchison, Kan., 1919-21; Professor of Sociology, St. Benedict's College, 1922-29. Executive Secretary, Catholic Conference on Family Life. Author: *Introductory Study of the Family*, 1930; *Readings on the Family*, 1932.
- F.S.** **FRANZ SCHRADER, Ph.D.** New York, N. Y.
Professor of Zoology, Columbia University. Pathologist, U. S. Bureau of Fisheries, 1919-20. Associate Editor: *Journal of Morphology*. Author: *The Sex Chromosomes*, 1927.
- T.S.** **THEODORE SCHROEDER** Cos Cob, Conn.
Founder of the Free Speech League. Author: *Free Press Anthology*, 1909; *Obscene Literature and Constitutional Law*, 1911; *Free Speech Bibliography*, 1922.
- E.Se.** **ERIC SELIGO** Katonah, N. Y.
Editorial Staff, *New Yorker Volkszeitung*, later *Neue Volkszeitung*.
- T.H.S.** **THOMAS HALL SHASTID, M.D., Sc.D., F.A.C.S.** Duluth, Minn.
Ophthalmologist, St. Luke's and St. Mary's Hospitals, Duluth. Author: *The Forensic Relations of Ophthalmic Surgery*, 1911; *Medical Jurisprudence in America*, 1912; *Ophthalmic Jurisprudence*, 1916. Contributor to the American Encyclopaedia of Ophthalmology.
- H.D.S.** **HALLETT DARIUS SMITH, Ph.D.** Williamstown, Mass.
Instructor in English, Williams College; Instructor in English, University of Colorado, Summer School, 1933.
- L.L.S.** **LEO LEONIDAS STANLEY, M.D., F.A.C.S.** San Rafael, Calif.
Resident Physician and Surgeon, California State Prison, San Quentin.
- M.R.S.** **M. RUSSELL STEIN, D.D.S.** New York, New York
Instructor in Oral Anatomy, Columbia University. Contributor of articles on The Anatomy and Evolution of the Human Dentition to *The Journal of Dental Research* and to *The Journal of the American Dental Association*.
- W.S.** **WILHELM STEKEL, M.D.** Vienna, Austria
Author: *Sexual Aberrations*; *Frigidity in Woman*; *Impotence in the Male*; *Peculiarities of Behavior*; *Sadism and Masochism*; *Anxiety States and Their Treatment*; *The Beloved Ego*; *The Depths of the Soul*; *Disguises of Love*; *Psychoanalysis and Suggestion Therapy*; *The Homosexual Neurosis*; *Sex and Dreams*; *Bi-Sexual Love*; *A Primer for Mothers*; *Twelve Essays on Sex and Psychoanalysis*; *Marriage at the Crossroads*.
- C.R.S.** **CHARLES RUPERT STOCKARD, M.D., Sc.D., Ph.D.** New York, N. Y.
Professor of Anatomy, Cornell University Medical College. Member of the Board of the Rockefeller Institute for Medical Research. Editor: *Journal of Experimental Zoology*; *American Anatomical Memoirs*. Managing Editor: *American Journal of Anatomy*. Author: *Origin of Blood*, 1915; *Hormones and Structural Development*, 1927; *The Physical Basis of Personality*, 1931.

- C.P.S.*** CALVIN PERRY STONE, Ph.D. Palo Alto, Calif.
Professor of Psychology, Stanford University. Director, Research Psychology Laboratory of Indiana Reformatory, 1916-17. Contributions on sex behavior and genetic psychology.
- C.T.S.** CHESTER TILTON STONE, M.D. New York, N. Y.
Department of Urology, Bellevue Hospital. Author: *The Dangerous Age in Men*, 1934.
- W.S.T.** WILLIAM SENTMAN TAYLOR, Ph.D. Northampton, Mass.
Professor of Psychology, Smith College; Lecturer in Psychology, Bryn Mawr, 1921-22; Professor of Philosophy, University of Maine, 1923-26. Author: *Readings in Abnormal Psychology and Mental Hygiene*, 1926; *A Critique of Sublimation in Males*, 1933.
- J.T.** JOSEPH TENENBAUM, M.D. New York, N. Y.
Attending Urologist and Surgeon, Neurological Hospital, Welfare Island, N. Y.; Attending Surgeon, Israel Zion Hospital, Brooklyn. Instructor in Urology, Columbia University, 1922-24. Author: *The Riddle of Sex*, 1929.
- M.T.** MAX THOREK, M.D. Chicago, Ill.
Professor of Clinical Surgery, Cook County Graduate School of Medicine. Attending Surgeon, Cook County Hospital; Surgeon, American Hospital of Chicago. Author: *The Human Testis and Its Diseases*, 1924; *Surgical Errors and Safeguards*, 1931.
- A.J.T.** ARTHUR JAMES TODD, Ph.D. Evanston, Ill.
Professor of Sociology, Northwestern University; Professor of Sociology, University of Pittsburgh, 1914-15; Professor of Sociology, University of Minnesota, 1915-21. Author: *The Primitive Family as an Educational Agency*, 1913; *The Scientific Spirit and Social Work*, 1919; *The Secularization of Domestic Relations*, 1928; *Industry and Society*, 1933.
- V.G.V.** VICTOR G. VECKI, M.D. San Francisco, Calif.
Formerly Captain-Surgeon, Austrian-Hungarian Army, and Royal Croatian Sanitary Councillor. Author: *Sexual Impotence* (German and English editions).
- S.V.** SERGE VORONOFF, M.D. Menton, France
Director of Experimental Surgery, Station Physiologique du Collège de France; Director of the Laboratory of Biology à l'école des Hautes Etudes. Surgeon-in-Chief, Russian Hospital, Paris. Author: *Treatise on Surgery*; *Treatise on Gynecology*; *Treatise on Bone Grafting*; *Treatise on Articulation Graft*; *Treatise on Ovarian Grafting*; *Treatise on Thyroid Grafting*; *Grafting of Interstitial Glands*; *Skin Grafting*; *Life*; *The Conquest of Life*; *Testicular Grafting from Ape to Man*. Contributor to the *Encyclopaedia Britannica*.
- K.M.W.*** KENNETH MACFARLANE WALKER, M.B., F.R.C.S. London, England
Lecturer on Venereal Diseases, St. Bartholomew's Hospital. Hunterian Professor, Royal College of Surgeons. Surgeon, Genito-Urinary Department, Royal Northern Hospital; Surgeon, St. Paul's Hospital. Author: *Hunterian Lectures on the Cause and Nature of Old Age Enlargement of the Prostate*; *Diseases of the Male Organs of Generation*; *Male Disorders of Sex*.
- J.J.W.** JAMES JOSEPH WALSH, M.D., Ph.D., LL.D. New York, N. Y.
Professor of Physiological Psychology, Cathedral College, New York. Formerly Dean and Professor of History of Medicine, Fordham University. Knight Commander, Papal Order of St. Gregory; Knight of Malta. Author: *Catholic Churchmen in Science*; *The Popes and Science*; *The Thirteenth, Greatest of Centuries*; *Psychotherapy*; *The Church and Healing*; *Sex Instruction*; *A Golden Treasury of Medieval Literature*.
- E.W.** EDWARD WESTERMARCK, Ph.D., LL.D. Abo, Finland
Professor of Sociology, University of London, 1907-30. Emeritus Professor of Philosophy, Academy of Abo. Author: *Origin of Human Marriage*, 1889; *The History of Human Marriage*, 1891; *Origin and Development of the Moral Ideas*, 1906-08; *Marriage Ceremonies in Morocco*, 1914; *Ritual and Belief in Morocco*, 1926; *Memories of My Life*, 1927; *Wit and Wisdom in Morocco*, 1930; *Ethical Relativity*, 1932; *Early Beliefs and Their Social Influence*, 1932; *Pagan Survivals in Mohammedan Civilization*, 1933; *The Oedipus Complex and Other Essays on Sex*, 1934.

- D.D.W.** DAVID DAY WHITNEY, Ph.D. Lincoln, Neb.
Professor of Zoology, University of Nebraska; Associate Professor of Zoology, Wesleyan University, 1911-16. Contributions on the regulation of sex in rotifers.
- A.S.W.** ALEXANDER SOLOMON WIENER, M.D. Brooklyn, N. Y.
Associate Pathologist in the Division of Genetics and Biometrics, and Assistant Visiting Physician at the Jewish Hospital of Brooklyn. Author: *Blood Groups and Blood Transfusion*, 1935.
- F.W.** FRITZ WITTELS, M.D. New York, N. Y.
Formerly Physician in the General Hospital of Vienna under Wagner-Jauregg; associate of Sigmund Freud in Vienna. Author: *Freud, His Personality, His Teaching and His School*; *Technique of Psychoanalysis*; *The World without a Jail*; *Critique of Love*.
- J.E.W.** JERRY EDWARD WODSADALEK, Ph.D. Minneapolis, Minn.
Professor of Zoology, University of Minnesota; Formerly Professor of Zoology and Entomology, University of Idaho; Dean of the Graduate School, University of Idaho, 1925-28.
- A.L.W.** ABRAHAM LEO WOLBARST, M.D. New York, N. Y.
Consulting Urologist, Beth Israel Hospital and Jewish Memorial Hospital, New York. Author: *Gonorrhea in the Male*, 1911; *Gonococcal Infection in the Male*, 1927; *Generations of Adam*, 1930.
- H.B.W.** HOWARD BROWN WOOLSTON, Ph.D. Seattle, Wash.
Professor of Sociology, University of Washington; Professor of Sociology and Statistics, College of the City of New York, 1909-18. Author: *Study of the Population of Manhattanville*, 1909; *Prostitution in the United States*, 1921.

EDITORIAL INTRODUCTION

I

"Male and female created he them" (Genesis, i, 27).—A modern man, emancipated from tradition, thinking biologically about sex, expresses himself in this strain: It is Nature's mandate that the spermatozoon enter the ovum, and by endless stimuli Nature arranges the union. In the deep or shallow waters, across the untracked air on the nuptial flight, within the dark of subterranean chambers and on all the vegetation of the earth, living creatures are drawn to their mates. The same instinct stirs minnow and whale, moves insect and eagle, runs through sheep and lion. Everywhere the male seeks the belly of the female, seeks her genital cleft, seeks to fulfill the destiny of life.

From primordial jelly to the highest of primates, the story of developing life is the story of sex. Recognition of this biologic fact would save much misery for mankind. The protoplasmic hunger, which we call love, does not diminish as we ascend the evolutionary scale. The hymn which Nature sings by day and chants by night, cannot be silenced by the preachments of theologians or the edicts of legislators. The sexual embrace was discovered millions of years before the wedding-ring was invented. There is no modern King Canute, in the rôle of censor, who can control the harmonic tides.

Viewed in biologic perspective, it is remarkable how closely the love-life of beasts resembles that of man. The sexual behavior of the human pair finds its counterpart throughout nature: in the gorgeous colors which the salmon wears during the breeding season, in the amatory cricket-chorus at dusk, in the black-cock's eager dance of passion, in the courting-homes that bower-birds build, in the jealous, even fatal, combats of antlered deer. A human male by the side of his beloved, inhaling her odor, is as a stallion excited by the smell of the mare. A frog, clasping its mate for a fortnight, certainly wears a honeymoon expression. A male stickleback, guiding his female to a well-made nest among the sea-weeds, is like a human bridegroom leading his bride to bed. No human parents can be more assiduous than the lower animals in preparing food, habitation and protection for their offspring.

Yet the analogy must not be carried too far. Man has troubles unknown to the rest of the animal world. The male insect seizes the female insect and fecundates her; in his moment of amorous ecstacy, he falls off and dies; the female deposits her eggs and dies. It is an elemental drama, and the generations continue the unending cycle. Man lives after the copulative act, and hence arise many sexual problems. Man has liberated himself from the tyranny of the seasons: in a steam-heated apartment in winter he is as ardent as in the spring; he fornicates in the autumn as readily as he commits adultery in the summer. Yet man must follow the Conventional Code of Sexual Ethics, which is at variance with nature. Aside from the marriage relationship, man takes his sex by stealth, and the marriage relationship itself is often a hotbed of deception, hatred and hypocrisy. To make the marriage-trap easy of access and difficult of escape is one of man's crowning stupidities.

The situation has been complicated by the advent of the new woman. A

creature, almost unknown to nature, she does not retreat in order to advance, she does not flee that she may be pursued and captured; she herself is often, and obviously, the huntress. She is no longer a frigid angel, suffering from the lusts of the male. She has stepped down from her niche in the wall, and removed the saint's mask. She has shed her wings, but she claims her human heritage. She admits her body is as capable in receiving as in giving pleasure. She does not lose her self-respect with the loss of her hymen. Often she is amused at the men who still look at the maidenhead as a sacred shield, guarding the temple of love and life, to be opened only on the wedding night. Woman has sacrificed her man-made halo, and yet has never stood so high in man's esteem. She does not wait to be deserted, often it is she who does the deserting. We are not as certain of our moral maxims as once we were. An illicit relationship may be of more permanence and worth than a legal union. There are uncounted thousands of men and women to whom life would be barren of meaning if they were denied their secret passion.

The central crime of legislation throughout the ages has been its failure to differentiate between an act of violence inflicted upon an unwilling individual, and a voluntary act between two willing individuals. Under the influence of the Judeo-Christian ethics, the motive of legislation has been to forbid whatever gives pleasure to the performers. The fact that an erotic union brings relief and contentment to those concerned, with injury to none, is sufficient reason for the law to attach penalties to such a union. Further, the State invades the bedroom of marriage, and informs husband and wife what postures they may and may not assume in coitus.

Even in a national crisis, grave as the one which now confronts us, when demagogues climb to power on ladders of lies, when robbery and murder are the order of the day, even then the authorities raid burlesque-shows for fear the spectators may see too much chorus-girl flesh. Policemen overlook gun-toting gangsters in automobiles, but are hot in pursuit of a little harlot of the streets. While citizens are terrorized by organized criminals, the judges debate the writings of D. H. Lawrence. Millions of men cannot find jobs, but the authorities find time to supervise the permissible length of a kiss on a film.

"Judge not, that ye be not judged" (Matthew, vii, 1).—The modern man is not asked to approve of sexual pathology, but he should realize that it is often necessary to cross out the phrase "voluntary viciousness," and write "endocrine imbalance" instead. An individual is not responsible for an obsession whose invisible roots extend back to his ancestors. A psychosis does not listen to the voice of reason, and there are irresistible acts against which the victim struggles in vain. Nature is not always normal, and she has so fashioned some of her offspring that they must gather their strange fruit in the gardens of deviation.

The Mr. X., of sexologic literature, who revels in the thought of being the slave of a woman, who writhes in rapture as she whips his buttocks, who licks the mud from a prostitute's shoes and asks nothing more of her, this well-known but mysterious Mr. X. is versatile: he is a grocer, a plumber, a soldier in uniform, he is a physician of standing, a learned jurist, a clergyman of influence, he is the daring young man on the flying trapeze, he is an author in silk pajamas writing best-sellers in his summer-house. There are no gaps in Nature, and between the normal male and the normal female are found all gradations of feminine males and masculine females. Nature, in an odd moment, spawns fetich-ridden perverts and varieties of in-betweens who cannot copulate in the standard manner, but whose passions are strong: they obey their imperious needs, though the result is infamy and ruin.

"*Shall the thing formed say to him that formed it, Why hast thou made me thus?*" (Romans, ix, 20).—There are sexual problems which the constituted authorities have never attempted to solve except through the door of a prison. Victims of biological anomalies are punished because the Potter misconstrued the clay. Officials who have never studied the alphabet of deviations, sit in judgment in the realm of sexology. Where the understanding of an Havelock Ellis or a Magnus Hirschfeld is required, society presents a Sir Alfred Wills or an Anthony Comstock. The mistakes of long ago are being repeated to-day; data are available for new viewpoints in sexology, but they remain in "Erotica," instead of being applied in practice.

Legislators should know that aberrations of the sexual impulse are not new, for several are mentioned in the first written history of the human race; neither are they unnatural, for masturbation, exhibitionism, sadism, masochism, fellatio, anilinctus, cunnilinctus, incest and inversion occur among the lower animals. The Justice who sent the last of the pagans to prison with the words, "I would rather try the most shocking murder case than be engaged in a case of this description," was the most culpable person in the court: the invert was guilty of acting according to his endocrines; the man on the woolsack was guilty of not understanding Plato.

Sexual deviations, if not connected with violence, should be removed from the penal code, for they harm neither the individual nor the race. Even so widespread an anomaly as inversion is only a splash in the vast ocean of heterosexual love. Normal men and women cannot become inverted through seduction. They may submit to homosexual acts for a variety of reasons, but they do not thereby become homosexual. Genuine homosexuality, like heterosexuality, is congenital and unchangeable. The invert may be nature's stepchild, but he is never society's menace. If he adds little to the increase of population, he sets an excellent example which many of the normally sexed would do well to follow. In the annals of the human race, the invert is but an interesting footnote. The average man, with his head pillowed on a woman's bosom, is in no danger from the sexual attractiveness of his fellow-men.

The physician who is an author under the name of Céline, whose *Journey to the End of the Night* is considered by Soviet writers "the last book of the capitalist world," has known all the good and evil on earth. When this hard-boiled and sophisticated modern is asked for "the most palpable affirmation of life," he replies: "A woman dancing in the nude, shaking her splendid behind." This is the sentiment also of the average man, and by that token the stream of the race will go on in natural channels.

Sex is the source of the greatest of human joys. Since this is so, let us not squander it too early; let us not contaminate this source with disease; nor profane it through ignorance; let us not deny it with prudery, nor stain it with frivolity; let us not sully it with arrogance, nor dishonor it with selfishness. Only by keeping that source wholesome can it be renewed, and only thus can we attain life's supreme fulfillment. Thus speaks the modern man.

II

On the other hand, there are those, and perhaps they are the majority of the elders, who lament that the present generation is obsessed with sex; they assert that preoccupation with sensuality, in marriage or out of marriage, hinders man's spiritual development. They demonstrate that monogamy is preferable to promiscuity, that chastity is a nobler ideal than indulgence. Such traditional and theological doctrines on sex, familiar to all, are ably summarized in this volume. Under the influence of these teachings, many men and women bring

up their families in the paths of rectitude and honor; others, dedicating themselves to the service of God, pass their lives in sexual abstinence. They feel they need no other rules of conduct than those prescribed by their Church. They are not interested in the premises of "the new school of sexology," some of which date back to Aristotle and other ancient pagans. In this clash between the old principles and the new, the *ENCYCLOPAEDIA SEXUALIS* maintains an attitude of impartiality.

The *ENCYCLOPAEDIA SEXUALIS* is a cross-section of contemporary knowledge in this field. Numerous tenets are presented in the ethical sections, but the *Encyclopaedia* itself is not committed to any viewpoint. Representative spokesmen of diverse faiths deliver contrary messages in these pages. The contributors form an international brotherhood of scholars, and if they cannot always decide on the available data, the reader must remember that sexology is only half science, the other half being sentiment. This book was written by, and for, men and women who are mentally and sexually mature; there are several useful volumes for the sexual education of children, but the *Encyclopaedia* is not one of them. If the conflicting guide-boards point to the truth in various directions, the reader must grope his own way. This book is a collective investigation in which each worker has come with his latest findings, but the reader must determine for himself what he will accept and what he will reject. Although the *Encyclopaedia* throws much light on the devious paths leading to the profoundest of human emotions, there is no finality in sexology.

The editor need have no hesitation in saying that never before has so extensive and eminent a group collaborated in a study of sexual life. To all whose gracious coöperation made the *Encyclopaedia* possible, and particularly to the scientists of world-wide fame who interrupted their experimental researches in order to contribute, the editor is deeply grateful. The *Encyclopaedia* is not, and cannot be complete, but it is a repository of sexual knowledge, and will serve as a starting-point for new investigations. The *ENCYCLOPAEDIA SEXUALIS* is a pioneer work, the first of its kind in English, and in some aspects the first in any language. As such, it is a landmark, not only in sexology, but in modern culture.

III

The Supplements.—A single volume, printed even as compactly as the present one, cannot cover all the fields which should be included in the *ENCYCLOPAEDIA SEXUALIS*. This edition is therefore devoted largely to the biological and experimental aspects of the subject. It is planned to follow this edition with a series of *SUPPLEMENTS*, the first of which—while containing additional biological and experimental material—will emphasize the clinical and psychopathological aspects. Apart from numerous definitions and biographies omitted from the original edition, the first *SUPPLEMENT* will contain, among other contributions, the following:

Abortion; Advertising, sexual factors in; Alcohol and Sex; Alimony; American Genetic Association; American Social Hygiene Association; Anal Eroticism; Androgynes (Plato's theory of their origin); Ante-Natal Life; Aphrodisiacs; Apron; Art and Sex; Artificial Impregnation; Baal Pe-or; Bed, origin and development; Behavior, Sexual; Bigamy; Birth Customs; Blushing; Bridal Night and Defloration; Censorship and Sex; Chaneroid; Co-Education; Coitus, forms of; Colors, sexual significance of; Concubinage; Coquetry; Corset, the; Creole; Dance, sexual aspects of the; Determination of Sex; Drama and Sex; Dreams; Duvalism (original description of an hitherto unnamed sexual deviation); Education, sex factors in; Endocrinology, sexual aspects of; Engagement Period; Equivalent, Sexual; Espionage, Erotic;

Eunuch; Fertility and Nutrition, with special reference to Vitamin E; Frotteurs; Furs; Gangs, sex factors in; Gene, theory of the; Genetic Psychology; Gerontophilia; Gibbusism (original description of an hitherto unnamed sexual deviation); Glove; Gonads; Gonorrhea (by several authors); Handkerchief; Hemophilia; Hermaphroditism; Hymen; Hypnotism; Hysteria; Ichthyology, sex factors in; Incest; Insects, sexuality in; Intermarriage; Jealousy; Kallikak Family; Kiss; Love Magic; Malthusianism and Neo-Malthusianism; Marine Biology, Sex Factors in; Marital Duty; Marriage Brokers; Marriage Laws; Masculine and Feminine (opinions and attitudes); Masochism; Massage; Melasism (original description of an hitherto unnamed sexual deviation); Menstruation; Mental Hygiene and Sex; Mirror; Miscegenation; Misogyny; Mort Douce; Mother-In-Law; Music, sexual aspects of; Nam Family; Negro, sex life of the; Octoroon; Ogino-Knaus-Method; Old Maid; Oral Eroticism; Pederasty; Plants, sex in; Prostitution in Armies; Psychoanalysis, definitions of terms in; Psychology of Sex Characteristics; Quadroon; Race Hygiene; Sadism; "Safe Period"; Seduction; Semen; Sex-Linked Method; Sodomy; Sports and Sex; Sterility in Higher Animal Hybrids, cause of; Sterility in the Male and Female; Stocking and Garter; Superstitions, sexual; Syphilis (by several authors); Tattooing, sexual aspects of; Telegony; Tetragamy; Transvestism; Tree and Serpent; Tribady; Urethral Eroticism; Uterus Phantasy; Vaginal Epithelium, changes in; Vasoligation; Voice, sexual aspects of the; Yaws; Zoology, sex factors in.

IV

The publication of the *ENCYCLOPAEDIA SEXUALIS*, with its *SUPPLEMENTS*, is peculiarly necessary in America at the present time. We can no longer look to the old fatherlands for guidance. Europe has become a vast breeding-camp, with a soldier's kit hidden in every cradle. In the Rhenish valleys, Neanderthal Man, long believed extinct, stirs again in his cretaceous limestone, this time armed with terrible weapons. From that prognathous countenance, Venus turns away.

In Berlin was established the world's first Institute of Sexual Science formally accepted by the Prussian Government as the Magnus Hirschfeld Foundation (1919). The Institute, indispensable to research workers because of its Departments of Sexual Biology, Sexual Pathology, Sexual Sociology, and Sexual Ethnology, proved equally important to the public, because of its practical Marriage Consultation Department, Sexual-Forensic Department, and Sexual Therapy Department.

Havelock Ellis, writing in the *Medical Review of Reviews* (March, 1920), declared: "The establishment of such an institution for investigation and instruction, and on the widest basis, is therefore an event in the history of the development of human knowledge and human practice. It may even be said to be comparable in importance to the foundation by Paul Broca in 1859—just sixty years earlier—of the Anthropological Society of Paris, the first society ever established for the scientific study of man. . . . In a sense, the Institute of Sexual Science is the Child of the Revolution. So it has been termed by its generous and enlightened founder, Dr. Magnus Hirschfeld, already known as the chief living authority on homosexuality as well as transvestism."

This Institute no longer exists. The inscription on the Ernst Haeckel Hall of the Institute—*Not for its own sake is Science, but for all Humanity*—is now concealed by the phantasmagoria of racism. On the Day of the Burning of the Books (May 10, 1933), the Institute of Sexual Science was wiped out in

fire and blood. Irreplaceable documents perished. Boys in uniform, who had not yet passed their examinations, were encouraged to burn the books of Sigmund Freud. Amid the blazing torches and triumphant shouts of the Nazis, the head of Magnus Hirschfeld was carried high in effigy. In the ashes, scattered by the night winds, disappeared the freedom of Germany. Universities and laboratories, once the pride of science, are now utilized for Potsdam propaganda. Everything except atavism has been eliminated from the Third Reich, and sexual science cannot be discussed. By an odd twist of reasoning, Dictator Hitler, himself a sexual pervert, does not permit students of his anomaly to reside within his realm.

The spirit of scientific progress is peripatetic: it does not remain permanently in any land. It crossed over from Egypt to dwell in Greece; then passed to Hellenized Alexandria; it rested in Europe in the Middle Ages before taking the long journey to Arabia; it returned westward to sojourn in Salerno, and later in Padua; it travelled northward to London and Leyden; it moved eastward to Berlin and Vienna. To-day its favorite home is America. Up to the present, our country has produced no sexologist of first rank, but perhaps, by one of the ironies of history, puritanical America—already the foremost exponent of modern medicine, surgery, and dentistry—may assume the leadership in sexual science. If that time comes, the *ENCYCLOPAEDIA SEXUALIS* will undoubtedly be regarded as one of the forerunners of the American Renaissance.

VICTOR ROBINSON

November 1, 1935

ENCYCLOPAEDIA SEXUALIS

AAA, an undetermined disease, invariably followed by a phallus as hieroglyph, mentioned in the Ebers and Brugsch papyri; the condition has been diagnosed as chlorosis aegyptiaca (Joachim) and as bilharziasis (Pfister). The generative organ is applicable to both of these diseases: chlorosis, because of the sexual disturbances accompanying it; and bilharziasis because periurethral abscess is one of its symptoms.

Heinrich Joachim, *Papyrus Ebers* (Berlin, 1890); Edwin Pfister, *Über aaa—Krankheit der Papyri Ebers und Brugsch* (Sudhoff's Archiv der Geschichte der Medizin, 1912, 12-20, with C. F. Madden's photograph of bilharziasis of the penis).—For illustration of sheath used by the Zulus of Rhodesia for protection against bilharziasis, see page 152 of this ENCYCLOPAEDIA.

ABBESS, LADY. Sardonic term for the madame of a brothel; in keeping with this conception, her male consort is considered the abbot, while the inmates are called nuns or Sisters of Charity. In French argot a brothel is "an abbey open to all," the mistress is the *abbesse*, her male associate *le sacristain*, and the girls *nonnes*.

In Albert Barrère and Charles Godfrey Land's *Dictionary of Slang, Jargon and Cant* (London, 1897), these terms are marked "obsolete"; they are however effectively employed in Léon Bizard: *Souvenirs d'un médecin des prisons de Paris* (Paris, 1925).

ABÉLARD AND HÉLOÏSE. Peter Abélard (or Abailard) was born about 1080 A.D. in Brittany, his father being a noble of low rank. He joined the

wandering scholars at the age of fifteen and reached the episcopal school at Paris five years later. He was a brilliant dialectician rather than a thinker, and, in the fashion of the time, he unseated one master after another and opened an independent school.

The Church had not yet dominated the vigorous intellectual life which pervaded France and closed the Dark Age, and Abélard treated problems of philosophy and theology boldly and on rationalistic lines. About 1116 A.D. he became master in the episcopal school at Paris, the germ of the future university, and the greatest teacher in Europe. Writers on the troubadours have, however, missed the fact that the lyric poetry of the south already enlivened the city, the Latin Quarter, and most of the abbeys of Paris, and that Abélard won fame as a troubadour in the same generation as William of Aquitaine. By the year 1118 he was the idol of Paris as well as one of the first scholars in Christendom.

To this point the career of Abélard is of interest because it shows that the new intellectual life of Europe, kindled by contact with the Spanish-Arab culture, was much more robust and defiant than is usually represented.

The next phase richly illustrates the equally defiant sex-mentality of the age and the attitude of middle-class women. Abélard lodged with Canon Fulbert, and he soon became the lover of the priest's supposed niece (most probably daughter) Héloïse, who was then sixteen or seventeen years old. Nothing is known of her mother, whom one tradition makes an abbess. She was a very gifted pupil and came in time to win by her learning a "repute throughout the kingdom," as Peter the Venerable

says. The few middle-class women were then displaying much the same independence as women of the knightly class, and the widow and daughters of one master opened a school of philosophy for them at Paris.

Héloïse from the start showed a strength of character which, with her ability, would in happier circumstances have made her a woman of note. When she became pregnant, Abélard, who was not yet a priest, offered to marry her, but, on the ground that this endangered his career, she warmly refused and wished to remain his mistress. He persuaded her to enter upon a secret marriage and to live, dressed as a nun, in the abbey of Argenteuil, where their son was born.

The name she gave him, Astrolabe, is another proof of Moorish stimulation of the growing culture. She denied that she was married, and her uncle (or father) hired men to castrate Abélard during the night. This mutilation was at the time not only a common outrage but a legal punishment, publicly inflicted (even on high nobles at London) in all countries. The law sanctioned reprisals on the assailants, and Abélard demanded that the canon himself should be thus punished. Stricken in health and spirit, Abélard decided to become a monk, and he insisted that Héloïse must take the veil of a nun. She did so with extreme reluctance, defiantly declaiming a passage from the pagan poet Lucan at the altar.

It is difficult to trace the particular effect of the mutilation in the profound change that came over the character of Abélard. The ignominy and loss of position deeply affected him, and for the rest of his life he was venomously pursued as a heretic by Bernard of Clairvaux. The abbey of St. Denis, to which he had retired, was loose and luxurious, and for a time he wrote semi-rationalistic works. But he did not contribute either the gaiety or the profit which the monks had expected.

He had to leave and, except for a few years of successful teaching in the country, his life became one of hard-

ship and anxiety. He was bold but apt to flinch in a crisis, and the charge of heresy was already serious. He tells us that for a time he thought of going to live in Arab Spain, but he retired instead, gloomy, soured, and pious, to a half-civilised abbey on the coast of Brittany, where his monks tried to murder him for insisting that they dismiss their wives and children. It was the period when celibacy was being enforced on the priests and monks.

From there he had the famous correspondence with Héloïse which is unhappily titled *The Love-Letters of Abélard and Héloïse*. Héloïse had become prioress (second in command) of the abbey at Argenteuil, and in 1129 it was seized by the reformed monks of St. Denis. The nuns, whom the abbot charged with "foul enormity," were evicted. Whether Héloïse had shared the freedom which was imputed to the abbey (and to most abbeys of the time, even by herself) we do not know, but Abélard gave her an estate in the country, where she built a small abbey and became abbess.

Abélard's frequent visits to her at this abbey loosened the tongue of his enemies, and he put into circulation a long letter which he called *The Story of My Calamities*. A copy reached Héloïse and started the *Love-Letters*. This title and the romantic treatment of Héloïse's letters by Pope (who never read the Latin original) and a number of French "translators" conceal their real interest. Abélard's letters are dull, ascetic, rasping. He speaks of nothing but their "sin."

But the letters of Héloïse are amazingly defiant. In the Latin text, of which Scott Moncrieff has now given a faithful rendering, she is not just an abbess of lax life but a scholarly woman who deliberately challenges the ascetic code. She still shows a personal submission to Abélard which distorts her philosophy of life, but she insists that it was a blunder to marry. "The name of wife may be holier," she says, "but that of mistress or concubine has always been sweeter to me," and "I

should deem it more precious and more honorable to be thy mistress than to be a Caesar's queen." To his horrified protest she replied: "I am lamenting what I miss, not what I have done."

Unfortunately, her personal conduct after she became a nun is entirely unknown, and the grim Abélard seems to have broken the spirit of revolt that fills her letters. They are a unique revelation of a strong and isolated mind of a woman resenting the ascetic code which Hildebrand had reimposed upon the Church, but their chief interest is as a witness to the robust phase of European life between the end of the Dark Age (in the last quarter of the eleventh century) and the development, a century later, of a policy of violent suppression of ethical as well as doctrinal heresy.

Abélard died, broken by his relentless persecutor, in 1142 A.D., and he was buried in Héloïse's abbey. She fell back into obscurity, as an abbess of regular life, after the last of her letters and died in 1163. She was buried with Abélard, and in 1817 their bones were brought to Paris and buried together in the cemetery of Père Lachaise at Paris.

The Letters of Abélard and Héloïse, English translation by C. K. Scott Moneriff, 1925. The only other work of Abélard available in English is his *Ethics* (J. Ramsay McCallum, 1935). Helen Waddell's *Peter Abélard* (1933) is a substantial historical novel. Biographies by C. Charrier, *Héloïse dans l'histoire et dans la légende* (1932); Adolf Hausrath, *Peter Abälard* (1893); and Joseph McCabe, *Peter Abélard* (1901).

J. McC.

ABELITES or ABELONIANS, a Christian sect in the environs of Hippo (Algeria), at the time of St. Augustine; the members took the vow of perpetual chastity, claiming they followed the example of Abel who died a virgin.

ABSOLUTION. The power of the Roman Catholic Church to free the sinner from his sin is based on John xx, 23: "Whose sins ye remit, they are remitted." According to the Council of Trent, the words *Ego te absolvo* (I absolve thee) constituted the formula by which the priest absolved the penitent

from guilt and eternal punishment. As absolution developed into an international industry, controlled by the Church, Leo X ordered the taxes on all crimes to be fixed, as if they were articles of merchandise. Under the auspices of this Pope appeared the first edition of *Taxes of the Holy and Apostolic Chancery and Penitentiary* (Rome, 1514). The work made it clear that absolution was distinctly a rich man's game, as witness the passage: "And carefully observe, that these kinds of graces and dispensations are not granted to the poor, because, not having wherewith, they cannot be consoled" (Paris edition, 1520, p. 23).

The following are among the sexual misdeeds for which absolution was granted in the papal price-list: abortion, pure adultery, adultery with incest, bestiality, carnal knowledge of mother and godmother, deflowering a virgin, and fornication with a nun in the cloister or out of the cloister. As an indication of changing morality it should be noted that the price for "absolution for one who has killed his father, his mother, his brother, his sister, his wife, or any of his kindred," was less than for various sexual sins.

Antoine Du Pinet: *Taxes des Parties Casuelles de la Boutique du Pape* (Lyons, 1564); Voltaire: *Philosophical Dictionary* (under Tax).

ABSTINENCE, SEXUAL. In the present article, sexual abstinence means refraining from sexual intercourse and so far as possible from all other forms of specifically sexual outlet. Whether complete abstinence from sexual expression is possible for normal adults, and whether the abstinence practised is good for the abstaining individuals and for society, are questions about which opinions have differed, and toward the solution of which some data have been gathered.

Primitive men, for various magical and practical reasons,³³ required sexual abstinence from some or all of their people for various lengths of time, evidently feeling that such abstinence was good

for the group if not for the abstinent individuals. Essentially the same tradition has come down through religious, social, and economic institutions to modern times,³⁸ and with definite effects upon medical and psychological theories of sex. In particular, the tradition of abstinence has conduced to the theory of "sublimation," which assumes that the sexual urge can be transmuted, or the life urge diverted, into non-sexual activities, in such wise as to improve those activities and solve the sex problem.³⁴ Against this ascetic tradition have contended the more "materialistic," "hedonistic," and "naturalistic" views that the various human urges are equally good in themselves, and that the good life requires, for every urge, free and natural expression.²³

History records great difficulty in the practise of sexual abstinence by males at least, and implies that complete abstinence is impossible for most if not all individuals.²¹ Modern studies support that implication.¹⁰ For example, case studies of more than a thousand single women indicate that in these women non-sexual interests as "means of utilizing total energy rarely prove quite satisfactory or complete."⁴

Most studies, it is true, have been limited by a selective factor, in that the case histories were obtained from persons in difficulties, from sufferers from ailments, or from individuals who chose to reply to questionnaires, instead of from a complete population of normal persons. One investigator avoided, largely at least, this selective factor by choosing, without knowledge of their sex adjustments or of their interest in any such study, forty young unmarried men who seemed to him superior, physically, intellectually, socially, and ethically, and by obtaining full data from every one of these men. As it turned out, every man acknowledged some overt expression of physical sexuality. Eighteen per cent of the forty limited their sexual expression to dreams with nocturnal emissions; 15% practised "spooning," "necking," or "petting,"

rather regularly, to the extent of orgasm at the time or during the subsequent night's sleep; 63% masturbated more or less regularly; 8% resorted to prostitutes; and 13% had fairly regular intercourse with women other than prostitutes. (In this as in subsequent groupings, the total is more than 100% because several subjects had more than one form of outlet.)

Grouped by ages, 40% of the men aged 21-25 limited themselves to dreams with nocturnal emissions, while only 5% of the 26-30 group, and 0% of the oldest group, aged 31-38, held to that outlet. Grouped by degree of apparent general superiority, of the least superior group 43% were given to masturbation, 29% resorted to prostitutes, and 43% restricted themselves to dreams; whereas of the most superior group, 75% practised masturbation, 15% "spooned," 10% had relations with women other than prostitutes, and only 10% held to the dream outlet (commonly thought the most "sublimational" of all these outlets). Furthermore, incidental data in the study suggested that severe sexual abstinence does not increase general energy: the data suggested, rather, that sexual adjustment aids general adjustment, and that sex drive correlates positively, on the whole, with general vitality.³⁵

Even if complete abstinence were proved possible for either sex or for both sexes, the question would remain, What are the individual and social effects of the sexual abstinence practised?

Individual effects of the several forms of sex outlet, in the forty men cited, were not obvious, either immediately or in subsequent general and marital adjustments so far as known; although all the men seemed to feel that normal intercourse, in love and under ethically approvable conditions, would be by far the best form of sexual expression. Perhaps different effects would have been obvious had these men not been unusually well-balanced and intelligent, some of them deliberately offsetting any "ingrowing" tendency of masturbation,

or coarsening tendency of prostitutes, by directing their fantasies and social relations along sexually normal lines. Undoubtedly much can be done thus, through sound teaching, thinking, and association, even in ordinary individuals, to maintain erotically normal reactions throughout the usual long interval between sexual maturity and marriage, or if necessary throughout a lifetime unmarried, against all tendencies toward erotic distortion.³⁰

The tendencies toward distortion, however, are real; particularly during adolescence and early adulthood, years in which the sexual urge is insistent or readily aroused, economic and social relations are full of uncertainty, and overt, socially approved, sexual habits have not been established. During this period, commerce with prostitutes does not train men for happy marital relations; temporary sex affairs lead often to rivalries, conflicts, and regrets; "spooning" or "petting" lacks substantiality, may lead to infection and impregnation, and habituates some individuals against adequate intercourse;⁸ masturbation, which necessarily differs profoundly from coitus, does not teach the individual how to win and love a mate, and can condition his orgasm to his own instead of to the opposite sex;¹⁷ waking fantasies, which commonly flourish in the abstinent, may fixate the individual's erotic responses upon wrong physiological patterns,¹⁶ or upon a limited, fantasied, class of persons—upon persons who resemble the parent of the opposite (or the same) sex, upon princesses with golden hair, princes charming but improbable, sirens, artists, pugilists, persons with "a wicked look," or even upon such literary patterns as appear in the following statements made to a gynecologist: "No man was ever so exciting to me as *The Garden of Allah*." "I am affected by Ruskin's *Sesame and Lilies*, but the book that shook me most is Maurice Hewlett's *Forest Lovers*." "I am always most excited by a row of asterisks."⁵ Even dreams with nocturnal emissions, though

probably cultivable (through removal of inhibitions) in place of less approved outlets, if continued over many years, may predispose to fantastic erotic patterns and, in men, to ejaculatio praecox.

Thus by various means, including unwarranted fears and misinformation, and the influences of perverted individuals, many young people who are potentially normal do in fact become hyper-romantic, ingrown, soured, homosexual, indifferent, blasé, anxious, neurasthenic, or otherwise distorted.²⁸ Physically, also, despite many misleading arguments to the contrary, it seems reasonable to conclude with modern authorities that prolonged sexual abstinence often produces, in men, weak erections and premature ejaculations, impotence, prostatic and testicular disorders; in women, chlorosis, dysmenorrhea, shrinking of the breasts, and congestion of the ovaries; and in both sexes, insomnia and metabolic and nervous disorders.^{28a} Abstinence after habituation to intercourse is especially conducive to these disorders.^{23c} In short, sexual abstinence (like probably any continually unsatisfied urge), considered solely in its direct individual effects, is usually if not always an evil.

Social effects of sexual abstinence as practised are, of course, only by abstraction separable from the individual effects; because individuals are social. By abstraction, however, we could consider, on the credit side, the extent to which abstinence makes for freedom from venereal infection, for freedom from family cares in persons devoted to high causes, for sense of personal and social integrity, for fairness to other individuals, and for conservation of sexual values for marriage. On the debit side, we could think of the extent to which abstinence conduces to the stresses, emotional distortions, and sexual inadequacies previously remarked; also of the very real loss in individual happiness and social motivation from failure to use the sexual urge, as such, for individual and social good.

In keeping with modern enlighten-

ment, the following four propositions seem increasingly acceptable: (1) Human beings' sexual appetites are not limited to periods of oestrus¹⁹ or to requirements of procreation, and, though modifiable in form of expression, probably cannot be inhibited completely, in healthy males at least. (2) The facts of human sexuality, normal and abnormal, provide no apology for license: living requires integration of interests, not the satisfaction of some interests (such as the sexual) through the destruction of other interests (such as the altruistic and idealistic).³⁷ (3) Enlightenment requires neither animal subjection to pleasure, nor primitive fear of pleasure, but the ethical use of pleasure.²⁹ In particular, satisfactory sexual expression under ethical conditions does not weaken but naturally conduces strongly to vocational, family, and social welfare. Thus one author remarks of sexual abstinence during pregnancy that "such abstinence is not only not feasible, but is unnecessary and may . . . wreck love-life of husband and wife."²⁸ Every faithful observer knows that unsatisfied sex hunger tends to make the individual irritable, impatient with family ties, and possessed of an animal restlessness; whereas the natural effect of adequate intercourse is to refresh the individual's love for his mate, and, by a kind of aura, for his children. (4) Ethical and adequate expression of the sexual appetite will be impossible for many persons until society encourages marriage, by teaching young people how to marry and how to live together, by reducing the traditional economic requirements for marriage, by legalizing contraception, and by allowing divorce by mutual consent.¹⁴

¹ K. B. Davis, *Factors in the Sex Life of Women*, 1929.—² F. Dell, *Love in the Machine Age*, 1930.—³ R. L. Dickinson and L. Beam, *The Single Woman: A Study in Sex Education*, 1934; *ibid.*, ⁴ xiv; ⁵ 111.—⁶ R. L. Beam, *A Thousand Marriages*, 1931, *ibid.*, ^{6a} 446; ⁷ 448.—⁸ G. L. Elliott and H. Bone, *The Sex Life of Youth*, 1929, 69; also Notes 29 and 16.—⁹ E. R. Groves, *Sex Psychology of the Unmarried*

Adult, in I. S. Wile, Ed., *The Sex Life of the Unmarried Adult*, 1934, 113–15.—¹⁰ G. S. Hall, *Adolescence*, 1904; also Notes 23a, 27, 26, 25, 22, 1, 12, 13, 6, 32, 33, and 3.—¹¹ F. W. Halle, *Woman in Soviet Russia*, 1934, 230.—¹² G. V. Hamilton, *A Research in Marriage*, 1929.—¹³ G. V. Hamilton and K. Macgowan, *What Is Wrong With Marriage*, 1929; *ibid.*, ¹⁴ 287–308; also Notes 7, 31, and particularly 29.—¹⁵ E. W. Hirsch, *The Power to Love*, 1934, 195; *ibid.*, ¹⁶ 129; ¹⁷ 165; also Note 36; ¹⁸ 84; *cf.* also 93, 192–193, 208.—¹⁹ N. W. Ingalls, *The Biology of Sex and the Unmarried Adult*, in I. S. Wile, Ed., *The Sex Life of the Unmarried Adult*, 1934, 85; also Note 24a.—²⁰ W. E. H. Lecky, *History of European Morals*, 1877, 2: 118–119.—²¹ G. May, *Social Control of Sex Expression*, 1930, 51ff., 124ff., 131–132; also Note 20.—²² J. F. W. Meagher, *A Study of Masturbation*, 1929.—²³ R. Michels, *Sexual Ethics*, 1914, 77; also Note 24.—^{23a} A. Nystrom, *The Natural Laws of Sexual Life*, 1908, 6; *ibid.*, ^{23b} 133ff.; ^{23c} 143, 156ff.; also Notes 28b and 32a.—²⁴ M. Parmelee, *Personality and Conduct*, 1918.—^{24a} H. M. Parshley, *The Science of Human Reproduction*, 1933, 285.—²⁵ M. W. Peck and F. L. Wells, *On the Psycho-Sexuality of College Graduate Men*, *Mental Hygiene*, 1923, 7: 697–714.—²⁶ W. Reich, *Sexualerregung und Sexualbefriedigung*, 1929; also Notes 30, 9, and 28c.—²⁷ W. F. Robie, *The Art of Love*, 1921; *Rational Sex Ethics*, 1916; *Sex and Life*, 1924.—²⁸ W. J. Robinson, *Woman, Her Sex and Love Life*, 282; also Note 6a; ^{28a} *Sexual Continence*, 1924, 48ff., 80ff.; *Sexual Impotence*, 1933, 156; *Sexual Truths*, 1919, 98; also Notes 23b and 15; ^{28b} *Sexual Impotence*, 157; ^{28c} *Sexual Truths*, 72 circa; ^{28d} *Sexual Continence*, 49.—²⁹ D. C. Rogers (a work in preparation); also Note 28d.—³⁰ W. Stekel, *Frigidity in Woman in Relation to Her Love Life*, 1926; ³¹ *Marriage at the Crossroads*, 1931. *ibid.*, ³² 49.—^{32a} C. T. Stone, *The Dangerous Age in Men: a Treatise on the Prostate Gland*, 1934, 50ff.—³³ W. S. Taylor, *A Critique of Sublimation in Males*, *Genetic Psychology Monographs*, 1933, 13: No. 1, 52n (a note published also in *Journal of Social Hygiene*, 1933, 19: 216–217); *ibid.*, ³⁴ 8–12; also Notes 40, 41, and 11; ³⁵ 16–34, 53, 68; also Note 15; ³⁶ 55–65; ³⁷ 97–101; also Note 39. ³⁸ Notes 33, 2, 41, and 11.—³⁹ D. A. Thom, *Normal Youth and Its Everyday Problems*, 1932, 41–45.—⁴⁰ A. R. Vidler, *Sex, Marriage, and Religion*, 1932, 104–107.—⁴¹ L. D. Weatherhead, *The Mastery of Sex Through Psychology and Religion*, 1932, 110–114.

W. S. T.

ACTA DIURNA (acts of the day), an official gazette published daily in ancient Rome; in addition to other proceedings of public interest, such as the trials of

criminals and news of the Senate, it contained a list of marriages and births.

ADAMITES, a sect which claimed to live in the original innocence of the first man. The members renounced marriage, believing it was instituted as the result of Adam's sin. They maintained that what was right in the dark could not be wrong in the daylight, and hence indulged in coitus without any attempt at concealment. The Adamites flourished in North Africa (2nd-3rd centuries, A.D.), their European counterparts being the Brethren and Sisters of the Free Spirit.

ADULTERY, the voluntary sexual intercourse of one spouse with any person except the other spouse (from Latin, *adulterium*). Since adultery always involves a married person, the history of the term is closely allied to the history of marriage and the body of law related to it [*See ADULTERY AND AMERICAN LAW, MARRIAGE, MARRIAGE LAWS **]. In this article, however, we are concerned with such non-legal aspects of the subject as are included in the evolution of religious, ethical and social, psychological, and anthropological attitudes toward adultery.

Religion.—Religion has always regarded adultery as a grave sin. This holds even for primitive religions which are saturated with magic. Some primitive peoples think that adultery mars the fertility of the soil and blights the crops. They seem to reason that since adulterous love is illicit, it is therefore polluting. Others claim that adultery is responsible for infant mortality. When a child is expected, both partners of the marriage must remain faithful or the child will die. Great danger likewise hangs over the husband guilty of adultery because he commits a kind of robbery in the course of which he perilously mingles his life identity with that of the woman's rightful mate.

Certain more sophisticated religions hold the sacramental view of marriage, a mystical union which is indissoluble. The adulterous partner to such a marriage is guilty of a most serious sin

against the faith. Orthodox Hindu marriage is sacramental, as is that of the Roman Catholic Church, the latter despite the fact that the seventh commandment of Moses did not grow from a sacramental concept. Although divorce is not recognized by the Roman or Anglican communions, separation and annulment are provided for the benefit of the innocent party to the marriage. Adultery is one of the few grounds regarded as due cause wherever religious practice allows any loosening of the marriage bond.

Christian Protestantism (with certain exceptions, such as the Protestant Episcopal Church in America) does not hold marriage to be a sacrament, regarding it rather as a solemn contract, subject to breach and dissolution like any other mutual agreement. Adultery remains, nevertheless, a grave act, not from the point of view of magic or sacramentalism but in the light of purity and fidelity.

The strong ascetic strain in Christianity also plays a part in the general attitude of all sects toward adultery with its implications of unlawful pleasure. Of modern religions, Christianity is as severe as any toward this sexual offence, despite the attitude implied by the pronouncement attributed to Jesus in the case of the woman taken in adultery. This is especially true of the Western Church whose influence increased the severity of the existing laws on adultery, while the Eastern Church contented itself with following the code already formed. And although Christianity has done much to improve the position of woman, her margin of disability over man for marital infidelity has undergone only a relative diminution since the opening of the Christian era. A noteworthy exception to this is to be found in Russia, now a violently anti-Christian country.

Ethics.—The ethical importance of adultery has followed very closely its legal and religious significance. Ethical thought has at various times held the adulterer punishable by death, by

mutilation, by divorce, and by social ostracism. Such ethical systems, however, as are not dependent for their authority upon religion, tend more and more to view adultery as a grave item of wrong-doing, but not as without equal among human transgressions. This is particularly true in rational systems which take account mainly of the more permanent results, if any, of sexual infidelity. When offspring is not the result, or when there is little active affection to give value to a bond between married people, the technical infidelity of one or the other of the partners does not carry the weightiest of moral condemnations. But wherever sacramentalism or asceticism enters to give its moral sanction, the adulterer invokes upon himself the severest of judgments.

It is the breach of faith caused by adultery that probably represents the principal moral failure according to modern ethical codes, since it is the sin against integrity and against permanent partnership values, rather than against God, or the rights of the husband or the wife that is important in a rational ethic.

Society.—Society at large tends to regard adultery as of importance chiefly in its relation to the family. Here the State is likewise interested because of the problems of divorce, alimony, child custody, and illegitimacy (See *ILLEGITIMACY*) involved. In countries where women still have more or less of a chattel status, society condemns them for their violation of the husband's (property) rights or for contaminating the blood purity of his offspring. But contemporary social thought, in the Western nations at least, has been influenced by science (See below, this article, under *Anthropology*) and democracy to ignore sexual license unless it involves such general concerns as financial support, children, and disease. The growing legal equality of the sexes, the impress of psychological theory (See below, this article, under *Psychology*), the rise of naturalism, and the improvement of contraceptive technique are ad-

ditional factors now tending to minimize the social importance of sexual intercourse between persons one or both of whom may be married. This impersonal attitude is contested by social conservatives of many kinds, yet it appears to be gaining influence in the more highly educated classes of Western nations, particularly where the family is losing ground as an institution.

Psychology.—The realm of psychology is the locus of a most pronounced contradiction where adultery is concerned. On the one hand, there is little question that the psychological phenomenon of sexual jealousy and possessiveness was, and is, the main source of all the vigor that goes into the prohibition of adultery. Yet on the other hand, the psychological impulse toward promiscuity is just as certainly a leading factor which impels toward adulterous behavior. Since psychology recognizes no ethical values, it is not concerned with this obvious contradiction within its field. It is inclined merely to point out that man's aversion to sexual betrayal by his mate springs from the pain he suffers when his sexual possessiveness, pride, and prestige are wounded.

In primitive societies emphasis falls upon male jealousy, and it is usually the husband who avenges his so-called rights. The by no means inferior capacity for jealousy among the women of more advanced societies is obvious, however. But such equality is not so obvious when the impulse toward promiscuity is examined in the light of recent evidence. Probably because of physiological differences, the drive to reproductive activity seems to be less aggressive and more selective in women than in men. There still is room to maintain that a more complex sexual appeal is required by women as a preparation for mating than is necessary for men, who still carry in their sexual psychology unmodified elements of savage pursuit and capture. Their sexual promptings have therefore remained more constant and more specific than

those of women, although there is no reason to think that women have evolved farther than men from pre-civilized levels of sexual habit. It is simply that natural female behavior fits more easily into the pattern of civilized life than does the natural behavior of the male.

Psychologically, therefore, the male is at something of a disadvantage under a marriage code of his own making, where his nature seeks to impose a taboo that it is constantly prompted to violate. One result of this has been that wherever psychology has come to influence ethics, it has had a liberalizing effect.

Anthropology and Biology.—Like psychology, anthropology does not concern itself with right and wrong, although it has been summoned more than once as an aid to moral conservatives. The moot question as to whether man is instinctively monogamous, polygamous, or promiscuous has not yet been fully answered. It can be said, however, that there is more evidence to show that monogamy, for example, has been adopted in certain primitive societies because of religio-magical beliefs, or for economic reasons, than because of unfettered sexual preference. It can also be said that polygamous and polyandrous marriage customs rose out of such considerations as the population ratio of men to women, which were sometimes very unequal, rather than out of the will of the flesh.

Biology usually confines itself to pointing out the obvious structural and functional differences between the sexes with the clearly implied difference of resultant behavior patterns. And its net position, to the extent that it is willing to take any at all, is far more tentative than that of religion or ethics. Like psychology, it takes no responsibility for the conflicts it cannot wholly ignore between the natural history of man and the life he professes to lead in his present state of civilization.

Summary.—The long time trend has brought a recognizable evolution in the concept of adultery, although the great

variety of codes in force at any one time in the world, renders generalization subject to numerous exceptions. It would seem, however, that the Western world has seen the gradual recession of religion as the supreme authority on sexual conduct in marriage and the slow rise of scientific and social thinking on this question. The result may be described as a compromise, in which mankind carries on one shoulder the millions of years of his animal inheritance, while on the other he bears the brief instant of his life as a sapient being.

Solomon Herbert, *Fundamentals in Sexual Ethics* (1920); H. S. Jennings, *The Biological Basis of Human Nature* (1930); Charles Margold, *Sex Freedom and Social Control* (1928); George Ernst Newsom, *The New Morality* (1932); Edward Westermarck, *The History of Human Marriage* (1921, Vols. 1 and 3).

W. M. H.

ADULTERY AND AMERICAN LAW. The ordinary citizen is quite familiar with the definition of adultery as the voluntary sexual intercourse of a married person with anyone other than the lawful spouse. The legal implications are not so clear. Is adultery a crime? Is it always a crime? Is adultery a crime where the woman is single and the man married? Or where the woman is married and the man single? Is it a crime involving moral turpitude? Is adultery a crime only on the part of the married participant? What proof is necessary to convict? Can the charge be made generally or only by an offended spouse? How does divorce, which may be sound in one state but not recognized in another, affect the matter? If adultery is a crime (as it is in New York, for instance) how does one explain the few prosecutions as compared with the numerous divorces granted by the civil courts on the ground of adultery?

The supposed effect on society of irregular sex relationships has led to a variety of legal offenses. If not "aggravated" in any way, the offense is fornication; if an illegitimate child is born, the offense is fornication and

bastardy; when the parties are related with a certain degree of consanguinity, it is incest; where it is preceded or induced by fraud or by a promise of marriage, it is seduction; if by force or if the girl is under the age of consent, the crime is rape.

Adultery, however, involves marriage on the part of at least one of the parties. Under the old Roman law an essential ingredient of the offense was that the female participant should be the wife of another. Thus the offense was not committed where a married man had sexual intercourse with a single woman, since under that law the gravamen of the offense involved the danger of submitting the innocent husband to spurious offspring and turning the inheritance away from his own blood to that of a stranger.

Under the English Ecclesiastical Law it was immaterial which of the parties was married, whether the man or the woman, and if one was married, both were guilty. Adultery in England was not an indictable offense at common law and therefore is an offense in the United States only when made so by statute.

Practically all states have adopted statutes making adultery a crime, but the elements of the crime and the responsibility are not always the same. In some states both parties are guilty; in others only the married party. In some the statute is directed only against single men who have illicit sexual relations with married women. In others the single person is not guilty. In some jurisdictions the crime is punishable only when the adulterous intercourse has continued during a more or less extended period of time or when it is indulged in publicly and thus is likely to humiliate the other spouse. In some states the crime is a misdemeanor, as in New York; in others, a felony.

I have stated that one of the basic facts involves the marriage of one of the parties. Even this, however, is not always a matter of certainty, for the validity of a marriage often depends upon the validity of a prior decree of

divorce. This is sometimes a question of great perplexity.

Intent is of course an ingredient of the offense. This does not mean intent to engage in adultery, but intent to commit the act. A question might arise as to whether or not lack of knowledge that the paramour was married is a good defense, or an honest belief in the death of the paramour's spouse. It is not a defense to a prosecution that the offender, because of his religious beliefs, did not seriously regard the marriage vow or that the act was in accord with custom. The fact that the female participant was a common prostitute is no defense. Physical incapacity to commit the act is a good defense.

The innocent party to a bigamous marriage is not guilty of the offense provided the illicit relationship was terminated immediately upon discovery of the true facts and provided that such innocent party was acting in good faith.

In many jurisdictions adultery, like other crimes, is regarded as an offense against society and proceedings may be initiated even against the wish and desire of the persons interested. On the other hand, some states incline to treat criminal proceedings for adultery as disciplinary measures which can be brought only at the instance of the innocent spouse, so that prosecution for adultery is forbidden except on the complaint of the injured partner. It need hardly be said that in either case prosecution depends largely upon the customs and views of society, except in those instances where, like other legislation which would attempt to make people moral by law, the statutes are used for vindictive or blackmailing purposes.

As a rule, in prosecutions for adultery the defendant may not be convicted on the uncorroborated testimony of the other participant and in most states the spouse of the defendant may not testify against the defendant. From the very nature of the offense frequently it can be established only by circumstantial evidence. The circumstances must be such as would lead a reasonable person

to the conclusion that the offense has been committed and should be so cogent as to exclude every reasonable inference except that of guilt. The meaning of the facts, however, depends again upon social custom, although as an eminent jurist once remarked, it will hardly be assumed that a man and a woman go to a hotel room to pray. Ordinarily, if proof of an adulterous inclination and opportunity is shown, the inference of sexual intercourse is justified. In one case the fact that the defendant and the woman were seen hugging and kissing for an hour and a half in a cemetery in the daytime was held insufficient to justify conviction for adultery.

Adultery is almost universally accepted as sufficient ground for divorce from the guilty spouse, although in some states which derive from the Latin law, adultery on the part of the man is not so regarded unless the act occurred in his own home. In other words, the test would seem to be the humiliation of the wife. The fact that in some states, a marriage cannot be dissolved even though the parties are cruel, inhuman, intemperate and hate each other, whereas it can be dissolved, however cordial their relations, if either is guilty of an act of infidelity, suggests the ecclesiastical influence on the law. Obviously adultery as a ground for divorce is not based on the theory that one loves his wife too little but that he loves someone else too much, however short-lived or intermittent the new emotion may be.

Commission of the act on the part of a woman in many jurisdictions releases a husband from her support and from responsibility for the payment of necessities furnished to her, although in one case the husband was required to support the errant wife since it appeared that he also had been found guilty of adultery. Of course, the husband's indiscretions do not relieve him at all, even though as a result thereof the wife leaves home. The guilty party is in many jurisdictions deprived of the right

of inheritance from the estate of the other.

Under the provisions of the Immigration Law the Government may exclude those who admit having been guilty of a crime involving moral turpitude. In the celebrated Countess Cathcart case the Government failed in its efforts because the act of illicit intercourse with which the Countess was charged, was committed in a country where such conduct was not a crime, thus leaving wholly undecided the question whether in legal contemplation the act involves moral turpitude.

It will thus be seen that although the definition of adultery is simple, yet whether or not a crime has been committed depends upon a variety of considerations—primarily upon the law or the absence of law in the place where the act was committed, the exact provisions of the statutes in the various states, the question of marriage of either of the parties, divorce and the validity thereof, and questions of this nature.

A. G. H.

AEROPE, of the royal family of Crete, was married at Mycenae to Atreus, but was seduced by her husband's brother, Thyestes. The crimes and tragedies that followed this adultery are among the most complicated, incestuous and horrible in all mythology; the sun refused to set at Mycenae.

Apollodorus, *Epitome*, ii, 10-14, Hyginus, *Fabulae*, 87 and 88. Ovid (*Artis Amatoriæ*, i, 327-30): "Had the Cretan woman abstained from love for Thyestes—how great a boon to be able to please one man alone!—Phœbus had not broken off in mid-career, and wrestling his ear about, turned round his steeds to face the dawn."

AFFENLIEBE, monkey love, a German term for unreasonable maternal love in which the child is never disciplined, but is spoiled by blind partiality in catering to all his wishes and whims.

AFTERBIRTH. The popular term for all that remains in the womb after the birth of the child—placenta, portion of the umbilical cord, and fetal membranes; their expulsion constitutes the third stage of labor. A technical name

for the afterbirth (formerly known also as the afterburthen), is the *secundines*.

ÂGE DE RETOUR. French term for "age of return," denoting the approach of old age, or the time of life when the vital powers begin to diminish. *Âge critique* signifies the menopause in the female, and the climacteric in the male.

AGER NATURAE, "field of nature,"

ALLEN, GRANT (1848–1899), scientific writer and novelist. The subject of this sketch, whose full name was CHARLES GRANT BLAIRFINDIE ALLEN, was born on February 24, 1848, in Kingston, Ontario, Canada, and died on October 25, 1899, at Hindhead, Surrey, England. His family history is unusually interesting because it throws light upon his genius and achievements.

Grant Allen's father, Joseph Antisell Allen, was an Irishman, his mother being a daughter of Joseph Antisell of Arbor Hill, Tipperary, and his father, Jonathan Allen, her own cousin, being a member of the Irish Bar and a great friend of Daniel O'Connell. Joseph Antisell Allen was a scholar of Trinity College, Dublin, and after taking orders in the Church of England emigrated in 1840 to Canada. Here, after a few years of service, becoming involved in a theological controversy with his Bishop, he resigned his ministry, and for the rest of his life lived in retirement at "Alwington," Kingston, Ontario, devoted to literary and philosophical pursuits. He was the author of numerous pamphlets, as well as of three volumes of verse, one being a long poem composed in 1864 for the tercentenary of Shakespeare's birth.

Allen's mother was Charlotte Catherine Ann Grant, only daughter of Charles William Grant, fifth Baron de Longueuil, and of Caroline, daughter of General John Coffin of "Alwington Manor" in New Brunswick, and niece of Admiral Sir Isaac Coffin, Bart. These Coffin brothers were direct descendants, in the fifth generation, of Tristram Coffin, who in 1642 emigrated from Devonshire to join the Massachusetts Bay Colony, and who later became leader of the twenty men that purchased Nantucket Island from Lord Sterling, holder of a Royal Grant. The Coffin brothers were educated at the Boston Latin School, and at the outbreak of the Revolutionary War were already in the British Army and Navy. Though they remained loyal to the Crown, they retained a sentimental affection for their old home, as evidenced by the fact that in his old age Sir Isaac returned to Nantucket and there founded the Coffin School in 1827.

When Caroline Coffin married Charles Grant, Baron de Longueuil, she allied herself with a

French family which Parkman, the historian, calls "the most truly eminent in Canada."¹ The Baron's father, Captain David Alexander Grant of Blairfindie, belonged to a family which had lost its Scotch estates because of devotion to the Stuart cause. He married Marie Charles Joseph, Baroness de Longueuil in her own right. The Longueuil Barony in Canada was created by Letters Patent from Louis XIV in 1700, when the King ennobled both Charles le Moyne, Seigneur of Longueuil, and the sur-

name, founder of Quebec and New Orleans, and the illustrious Iberville, who—from Hudson's Bay to Louisiana "had a career of the highest distinction on both land and sea."²

Thus Grant Allen was the offspring of several families of remarkable independence, courage, and pioneering spirit, and in his mixture of Irish, Scotch, English and French blood the Celtic strain was largely predominant. It is interesting to note that in regard to Irish affairs, while the elder Allen was an ardent Unionist, the younger was a staunch Home Ruler. The former was a Churchman, though he rebelled against the Athanasian Creed; the latter was opposed to all forms of religious dogma. And "Grant's mother was as sparklingly French as his father was solidly British."³

Grant Allen began his education with his father, but at thirteen was taken to New Haven, where he was placed under a tutor from Yale. A year later he was taken to a school at Dieppe, France, and finally was transferred to King Edward's School, Birmingham, England. In 1867 he entered Oxford, winning a much sought-after scholarship known as the Senior Classical Postmastership at Merton College. He took a first-class in Moderations in 1869, a second-class at Greats in 1870, and his B.A. degree in 1871.

Allen went to Oxford in the pre-scientific days of University education, but from childhood he had been devoted to botany and later his main intellectual interest became scientific and philosophical speculation. He was an ardent student of the works of Spencer, Darwin and Huxley, and at Oxford was known as a pronounced evolutionist and a brilliant exponent of the "Gospel according to Herbert Spencer."

After taking his degree Allen engaged in teaching and it was while acting as tutor at Oxford to the sons of Lord Huntly that he first met his future wife, Miss Ellen Jerrard, sister-in-law of his friend Franklin Richards, Lecturer in Trinity College. Their marriage was followed by a quarter of a century of singularly happy wedded life, and when in 1895

¹ Francis Parkman, *The Old Régime in Canada*, 1884, p. 262.

² Charles W. Colby, *Canadian Types of the Old Régime*, 1908, p. 180.

³ William Chislett, Jr., *Moderns and Near Moderns*, 1928, p. 199.

Allen published his "storm-center" of a novel, *The Woman Who Did*, he presented it "to my dear wife to whom I have dedicated my twenty happiest years."

Before the honeymoon was over the Allens sailed for Jamaica, where Grant had been appointed Professor of Mental and Moral Philosophy at the newly founded Government College in Spanish Town, a position which he held for three years. In Jamaica he learned much about tropical flora and fauna, as well as about a primitive people. He also devoted some time to Anglo-Saxon and Early English History, and read Catullus and other classics with his students. All this experience he turned to good account later in both his scientific essays and his fiction.

On returning to England he wrote his first book, *Physiological Aesthetics*, which he dedicated by permission to Herbert Spencer, who expressed admiration of Allen's "great originality and insight," and warmly approved of his "exposition of the theory of Pleasure and Pain." The marked recognition accorded to the book won for the author an entrée to the magazines, and his first article, "Carving a Coconut," was accepted by the "Cornhill" and brought him in twelve guineas. From then on Allen managed to make a comfortable income from his writings, which year after year dealt with such a variety of subjects, that at the time of his death Andrew Lang could speak of his genius as "the most versatile, beyond comparison, of any man in our age,"⁴ while Richard Le Gallienne called him "the most variously gifted man of letters of his time."⁵

The titles of his books (and many of his essays never appeared in book form) alone number seventy-three. These are not classified by his biographer, Edward Clodd, but, in his address at Grant Allen's funeral, Frederic Harrison, after alluding to "the immense roll of his published works," enumerates these heads: "science, biology, physics, botany, mineralogy, metaphysics, history, palaeontology, archaeology, theology, philosophy, sociology, ethics, art, criticism, fiction," the product of an "inexhaustible and versatile brain." And even in this long list, Mr. Harrison has overlooked one important heading, for *The Lower Slopes* is a volume of charming poetry, partly humorous and partly philosophical, and Andrew Lang calls Allen "a master of the ballade."

Among the best known of the popular sci-

ences of *Working Men* (1884) and *Charles Darwin* (1885). His *Force and Energy* is a treatise on Physics and his *Historical Guides* (Paris, Florence and Belgium) deal with questions of art-appreciation. In the field of Classical Literature he translated in verse-form the *Attis* of Catullus, and added some essays on the poem, including one "On the Origin of Tree-Worship." Frederic Harrison regarded as his most important achievement his "inquiry into the origins of religions," a volume of 447 pages, which Allen published under the title *The Evolution of the Idea of God* (1897).

As to his less serious works, some of which were confessedly "pot-boilers," though all of them are written in a charming style, there are thirty or more tales of fiction to be credited to Allen. In the short story he was "a brilliant pioneer," and in *The Reverend John Creedy* and *Mr. Chung* he handles attractively "the romance of the clash of civilizations." *What's Bred in the Bone* was written in a month, but won for the author the prize of a thousand pounds. *The Great Taboo* is an anthropological story, and *In All Shades* is an echo of Allen's life in Jamaica, while *The Tents of Shem* is dedicated to a friend "in memory of many happy days" in North Africa. *The Linnet* recalls the Tyrol and embodies a compliment to his poet-friend, William Watson.

There is one story that was put forth with a more definite purpose than any of the rest. *The Woman Who Did* was "written at Perugia—spring 1893—for the first time in my life wholly and solely to satisfy my own taste and my own conscience." Such is the foreword and we must take the statement at its face value. The very title of the book is a challenge, and Allen is challenging the "British Barbarians"⁶ to test their faith in current conventions. Did they believe that a mere ceremony, civil or religious, was sufficient to turn even a loveless union into marriage, or, conversely, that without such a formality no union, however sincere the love on which it was based, should be recognized? In those late Victorian days the

Large (1881); *Colin Clout's Calendar* (1882); *The Colours of Flowers* (1882); *Flowers and their Pedigrees* (1883); *Science in Arcady* (1892); *Post-Prandial Philosophy* (1894); *Flashlights on Nature* (1899).

Of a different class are *Anglo-Saxon Britain* (1881) and his biographies, including *Biogra-*

⁴ *Longman's Magazine*, December, 1899.

⁵ *Fortnightly Review*, December, 1899.

might be a nonessential convention was a shocking thing to contemplate. To be sure, the problem had been presented

⁶ Grant Allen's *Woman Who Did* was followed by another "hill-top novel," *The British Barbarians* (1895), notable in the Victorian era for its unconventional views on adultery, which purported to belong to the twenty-fifth century.

under some disguise by both George Meredith and Thomas Hardy, but here was a writer who flaunted the issue in the very title of his book. He was assailed from right and from left, and Sir Walter Besant found it necessary to proclaim in Allen's defence that "he was a man whose whole life was regulated by the strongest sense of principle, honor, loyalty and truth."

The irony of the situation lies in the fact that, in his fight against what he called "legalised prostitution," Allen does not convince his readers that the woman—his heroine—was right in what she *did*. Rejecting the marriage ceremony as a survival from an age of slavery, she lived with her lover, and by him had a child, born after the father's death. In later years, when the child learned that she had no legal family status, she turned upon the mother who had wronged her, and the woman, bereft of her child's love, took her own life. The fight for a slender principle becomes a solemn tragedy. The author expected his readers to be deeply sympathetic with his heroine, but diverts their sympathy to the one who suffers most, the unhappy daughter. It is not unlike the Dido tragedy in Virgil's *Aeneid*. The poet has portrayed Dido's distress so vividly that the average reader denounces the hero for his cruelty.

Nevertheless, *The Woman Who Did*, which passed into at least twenty-three editions, has had no little influence in making the laws of marriage and divorce in Great Britain more flexible and rational than they were in the late nineteenth century.

H. R. F.

AMAH. In China, a female brothel servant who acts as a maid to prostitutes, to give the latter "face" with their clients. At times these amahs purchase children to train them for the brothel, the relationship then being "mother" and "daughter."

League of Nations, *Commission of Enquiry into Traffic in Women and Children in the East* (Report to the Council, Geneva, 1933, p. 42): "Often an ex-prostitute, who is only

a brothel *amah* and has nobody in the world to care for, will invest her savings in the purchase of a little girl whom she will bring up as her daughter. The child will grow up in the brothel. Both mother and daughter have never known any other but brothel life and they find nothing in the choice of a prostitute's career for the girl which might stand in the way of their mutual affection."

AMBIVALENT FEELING. The emotion of love and hatred for the same person at the same time. "I love you and I hate you."

Catullus (lxxxv): "I hate and I love. Perhaps you ask why. I do not know, but I feel so, and am in torment."

ANAMALIS FOBI (or BAMBOULA OF THE WOLOFS), "the dance of the treading drake," an erotic dance of the Senegal Negroes.

Pierre Loti (*The Romance of a Spahi*, 1881): "*Anamalis fobil*! shrieked the Griots, striking on their tom-toms, their eyes glaring, their muscles strung, their bodies glistening with sweat. And everyone repeated, clapping their hands in frenzy—*anamalis fobil—anamalis fobil*—the first words, the dominant note, and the refrain of a maniac song, mad with fervor and licence, the song of the bamboula of Spring! *Anamalis fobil*! the cry of wild unrestrained desire, of the vigor of the Negro overwarmed by the sun into a terrible hysteria, the alleluia of Negro love, the hymn of seduction."

Jacobus X. (*Untrodden Fields of Anthropology*, 1898): "In the *anamalis fobil*, the dancer in his movements imitates the copulation of the great Indian duck. This drake has a member of a cork-screw shape, and a peculiar movement. The woman, for her part, tucks up her clothes, and convulsively agitates the lower part of her body by the motion of her haunches; she alternately shows her partner her vulva, and hides it from him, by a regular movement, backwards and forwards, of the body."

ANDROARIUM, or ANDROARION (masculine egglet; *ovarium virile*). The ovary of the male: the testicle.

ANDROLOGY. The study of the masculine constitution; specifically, the study of the male sexual organs. *Andriatrics* is the branch of medicine devoted to the diseases of men and their treatment.

ANESTHESIA, SEXUAL. The term frigidity is used to describe a condition in female sexual life. If we speak in general about the frigid woman we mean that she is not interested in sexual grati-

fication or, apparently, she does not enjoy sex life. If we use the term in medicine, frigidity means the inability of the woman to achieve *vaginal orgasm*. This must be emphasized, because she may and does obtain gratification in her love life, a gratification which is sexual in nature though not strictly connected with vaginal intercourse.

In modern medicine frigidity (sexual anesthesia) is considered a neurotic problem rather than anything else, although there may be a type of frigidity due to organic physical disturbances. As for instance, in the different diseases of the genital organs, where intercourse itself may be or is painful, and therefore the defense against it causes and maintains frigidity. Both constitutional elements and anatomical factors bring about the development of sexual anesthesia.

Very seldom do women seek treatment for the complaint of frigidity. What brings them to the doctor is a number of various nervous complaints, which are bound up with their sexual difficulties. The nervous complaint may be a general dissatisfaction, feelings of inferiority, very often anxiety states, a constant tenseness and oversensitiveness. The woman may be extremely shy, which leads to withdrawal from social life; at the same time if married she may become over-protective toward her children and thus harm them. Development of a strong reactive attitude against men is possible, with resultant inability of the woman to live up to her feminine rôle. All these can be the result of inner, deep-lying, most of the time unconscious, psychological difficulties.

The fact that frigidity can be treated successfully with psychotherapy and that a very small percentage of women so treated retain their complaint proves that the psychological factors are outstanding in the causation of frigidity.

A further proof of the importance of psychological factors in frigidity is that to our knowledge and experience a woman's inability to enjoy sexual inter-

course sometimes changes spontaneously after childbirth or with a change of the sexual partner, as for instance, after divorce and remarriage.

In connection with the latter we must also take into consideration the fact that impotentia of the male partner may be responsible for the development of frigidity.

As to the other underlying psychological causes, we may mention that first place and the most important rôle is assigned to early childhood fixations. The early attachment of the little girl to the father is carried over into adult life, and the sense of guilt which usually accompanies a strong love attachment, interferes with the enjoyment of sex in later life.

The manifold early childhood experiences and impressions are responsible for the development of very strong masculinity drives and also for strong homosexual tendencies which, in turn inhibit the enjoyment of sex life.

Early childhood fantasies about sex in general and about pregnancy and childbirth in particular, may constitute a disturbance to the development of normal healthy sexual pleasure. The different phases in the sexual development of the woman also contribute to the difficulties arising from the sexual attitude.

The phases which can be recognized are: the first, in earliest childhood, the necessity for the little girl to accept and reconcile herself to the fact of not having a penis; then at puberty, the acceptance of menstruation (which is so badly tolerated by most women); later in life, defloration, which constitutes a shock; still later, childbirth; and at the last, the menopause. All of these stages leave their definite mark, differing only in degree, on the psychic life of the woman, and all may be contributing causes to the development and maintenance of frigidity.

The problem of frigidity or sexual irresponsiveness of the woman is possibly as old as human culture itself. Erotic literature dealing with this problem of

sexual anesthesia and the different devices to correct it leads back thousands of years. This indicates that it was as much of a problem to the men of the past as it is at present.

As to the prevention of frigidity we may mention that sensible sexual education and proper enlightenment in sexual hygiene may at least help, by eliminating certain fears connected with sexual knowledge and fantasies of the young. As to its treatment when present, psychotherapy is the only means of treatment, and among the psychotherapeutic procedures, psychoanalysis is to be mentioned in first place.

Helene Deutsch, *Psychoanalyse der Weiblichen Sexualfunktionen*, Internationaler Psychoanalytischer Verlag, Wien.—Otto Fenichel, *Hysterien und Zwangsneurosen*, Internationaler Psychoanalytischer Verlag, Wien, 1931, pp. 84, 92.—Sigmund Freud, *A New Series of Introductory Lectures to Psychoanalysis*, New York, 1933, pp. 180-1.—E. Hitschmann and E. Bergler, *Die Geschlechtskälte der Frau*, Verlag der "Ars Medici," Wien, 1934.—Karen Horney, *The Flight from Womanhood*, International Journal of Psychoanalysis, vii, pp. 324-39.—Sandor Lorand, *The Morbid Personality*, New York, 1931, pp. 21, 27, 92-3, 99, 104, 107.—Hermann Nunberg, *Allgemeine Neurosenlehre*, Verlag Hans Huber, Bern, 1932, pp. 77-8.—Sandor Rado, *Fear of Castration in Women*, The Psychoanalytic Quarterly, ii, nos. 3-4, pp. 425-75.—Wilhelm Reich, *Die Funktion des Orgasmus*, Internationaler Psychoanalytischer Verlag, Wien, 1927, pp. 42, 111f, 173f, 182.

S. L.

ANHEDONIA. A condition in which there is total deprivation of pleasure in acts that are normally pleasurable. In sexologic literature the term denotes complete frigidity.

ANIMIERKNEIPEN, saloons with female attendants.

Cedar Paul's definition: "*Kneipe* signifies a drinking-saloon or pothouse, equivalent to the French *cabaret*. The German *Animierkneipe* is a beer-saloon at which the attendants are women (*Kellnerinnen*) whose function is to attract the male customers of the place, to incite them (*animieren*) to drink freely, and to play the part of prostitutes when required. Thus they correspond to the *les inviteuses* of the similar drinking-saloons in Paris."

ANTEROS, the god of mutual love, who punished those who did not return the love of others; frequently repre-

sented as opposed to his mischievous brother Eros.

Pausanias (i, xxx): "Before the entrance to the Academy is an altar to Love, with an inscription that Charmus was the first Athenian to dedicate an altar to that god. The altar within the city called the altar of Anteros (Love Avenged) they say was dedicated by resident aliens, because the Athenian Meles, spurning the love of Timagoras, a resident alien, bade him ascend to the highest point of the rock and cast himself down. Now Timagoras took no account of his life, and was ready to gratify the youth in any of his requests, so he went and cast himself down. When Meles saw that Timagoras was dead, he suffered such pangs of remorse that he threw himself from the same rock and so died. From this time the resident aliens worshipped as Anteros the avenging spirit of Timagoras."

ANTHROPOLOGY.

1. IN REGARD TO ORIGINS.
2. SOCIAL CONTROL OF SEX.
3. SYMBOLISM.
4. MYTH AND SEX.
5. CHILD NURTURE AND ADULT SEX BEHAVIOR.
6. SEX AND VARIOUS FORMS OF MARRIAGE.
7. DIFFERENT PHRASING OF SEX.
8. THE CONCEPTION OF THE NORMAL.
9. PREMARITAL CONCEPTION, BIRTH CONTROL AND ABORTION.
10. SEX AND AGE.
11. THE RÔLE OF EACH SEX.
12. SPECIFIC BELIEFS ABOUT SEX.
13. THEORETICAL USE OF THE MATERIAL.
14. FURTHER RESEARCH NEEDED.

In this article the term *anthropology* will be interpreted to mean: the scientific study of the cultures of primitive, that is preliterate, peoples. From the investigation of the patterning of sex behavior among many different and homogeneous primitive cultures, the student of sex may look for certain definite material—the most important of which is the diversity and range of social patterning of the sexual impulse, whether it be in physiological terms, such as the specialization of unusual erogenous zones, or in the various social forms within which the sex impulse is allowed or denied expression. Before considering these positive aspects of the question it is necessary to consider some common misconceptions:

In Regard to Origins.—It is repeatedly assumed that the social forms of

contemporary primitive peoples furnish reliable clues to forms of society ancestral to our own. There are certain departments of human life in which this is true, most conspicuously in the field of technology and those aspects of the social life such as size and integration of population units which are directly affected by the existent state of technological knowledge.

There is, however, no reason to assume that present day primitive societies represent ancestral forms in the patterning of the sexual life or that it is practicable to use primitive material in the construction of imaginative sequences dealing with the evolution of the social control of sex. It has not been demonstrated that there is any direct or causal connection between marriage and sex practices on the one hand and the stage of technological development upon the other. (From this generalization, technological inventions directly relevant to sex practice, i.e., contraceptive devices, abortive instruments, etc., must, of course, be excepted.) Even when we find among primitive peoples negative conditions, such as a lack of knowledge of paternity, there is no ground for assuming that this is a survival from a prehistoric period. It may just as well be a modern development comparable to a theory of the soul, or the medieval theory of the homunculus.

Similarly, when we find records of primitive people among whom the customary copulatory position is *a tergo*, this may be a survival from pre-human times, but there is no more evidence for such a conclusion than there is for an interpretation referring the same copulatory position when it recurs among sophisticated peoples as a variant of sex practice, to a continuance of a non-human tradition. When among equally primitive people there occurs for instance the face-to-face copulatory position or the type of kiss which is socially standardized in our society and rare in primitive societies, this kind of argument falls down. It may be said categorically that students of the origins

of sex patterns will find very little available material in the data on contemporary primitive societies.

What is true for such direct aspects of sex as position of copulation, is equally true of forms of marriage. The misconceptions of the late 19th Century that there is evidence for an orderly evolution from promiscuity, through group marriage, matriarchy and final development of patrilineal forms, is without foundation in modern research. Matrilineal forms occur sporadically among primitive and semi-primitive peoples—they are one possible variant of a strong unilateral kinship development which emphasizes the woman's relationship to the children, or the house, or other property, at the expense of a similar emphasis in the man's case.

Its occurrence cannot be interpreted as a survival of a form ancestral to our own. In fact, even those theorists who regard matriliney as an earlier stage of all human social development, have been forced to introduce an anomalous theory of social regression to explain why contemporary peoples with the simplest technology—e.g., Eskimos, Veddas—do not exhibit matrilineal forms. Students of sex behavior may find much illumination in studying matrilineal institutions and the effect produced upon sex behavior by rendering the mother and child independent of the mother's sexual partner, but it will be illuminating as to the way in which the sexual impulse functions under certain conditions, not about the origin of social forms.

Social Control of Sex.—One of the strongest misconceptions about primitive people is that they are characterized by a more overt, less patterned and more vigorous sexuality than are civilized peoples. The widespread occurrence of polygamy gives further color to this view. But here again it is necessary to sound a note of caution. Primitive peoples are alike only in the absence of a written language and dependence upon a comparatively simple technology.

There is no sense in which it is possible to discuss the sexual life of savages, *qua* savages, as over against the sexual life of civilized man as such. Instead, we can only discuss the diverse cultures of a large number of primitive peoples, each one with its distinctive and integrated forms of child-rearing and mating within which the specific sexual behavior of the growing individual is patterned. These contrasting forms show the widest gamut from license to rigid ascetic control. There is the Eskimo game of "lights out" which permits new temporary pairing-off among the married, and the Kiwai ceremonials in which the whole community coöperates in a promiscuous sexual activity designed to produce sexual secretions to fertilize the crops. Such instances must be placed side by side with the long segregation from sex during the hunting season practised by certain tribes of California, and the several-year long religious tabu periods of the Mentawai, and societies like the Gibertese and the Manus of the Admiralty Islands where the slightest sexual lapses were dealt with severely.

Within the limits of primitive society it is possible to find the same range in sexual over-expression or under-expression which is found among individuals in our own culture, and it must be remembered that whatever the social norm, either emphasis upon sex or an attempt to limit sex behavior as far as possible, there is always a rigid social control as defined and explicit as the controls of civilized societies, and often far more definite.

Symbolism.—The scholarly investigation of various primitive and archaic fertility cults, in which there has been an elaborate artistic expression of fertility ideas, has caused many students to expect to find sexual symbolism highly developed as a characteristic of all primitive peoples.

Actually the widest variation obtains in this respect. There are primitive peoples, like the Indonesians and many African tribes who perceive and culturally

recognize the closest connections between human fertility and animal or crop fertility, and who express this in a varied symbolism. Less direct but indisputable close association between sex and the hunt, between male virility and male success in other fields of endeavor are found in many primitive ceremonials such as those Australian ceremonials in which blood from the phallus is used as an essential component. Australian aboriginal ceremonialism is shot through with a form of symbolism for which the bodily processes of the individual furnish an indispensable ground plan.

In marked contrast is the ceremonial life of the North American Indians in which the most meagre use is made of sexual symbolism, and clues upon which ceremonials are developed are taken instead from the natural environment, the seasons, the character of animals and birds, etc. There is no more justification for regarding one form of symbolism as primary than for considering the other so; we can only say that some primitive peoples have made a full use of sex symbolism, and others have conspicuously neglected it.

Myth and Sex.—There has been much discussion of the significance of certain widespread myths such as The Magic Flight, The Vagina Dentata, The Swan Maiden, The Island of Woman, etc., in which there is either imputed or very obvious sexual symbolism. Most of these discussions fail to distinguish between the problem of origins and the problem of diffusion, i.e., diffusion which is based upon some aspect of the myth other than the sexual symbolism under consideration.

Consider for instance the Vagina Dentata, one of the most widespread myths in the world, in which a female with a toothed or otherwise armored vagina successively castrates all males who attempt coitus, until a wooden phallus, or some similar device, is used by a male to render her harmless. That this myth originated among a group of people who actually feared the sexuality of women is a very tenable hypothesis. That it

is so widespread because fear of female sexuality is a frequent and recurrent phenomenon of male psychology, is also tenable.

But the presence of the myth among any given primitive people may be due to other causes, such as the incorporation of the myth in a wider myth cycle, or its significance in a ceremony, and the absence of the myth in a given culture is likewise not data upon the absence of fear of female sexuality. The student of the psychology of sex may find suggestive material in these widespread myths if he bears in mind these necessary historical considerations. Comparisons between the idiosyncratic fantasies of psychotics in our society and these primitive constructs can also be illuminatingly made. Of even greater value, however, is a study of which of the myths current in a given region are accepted or rejected by a given people and of the modifications which are made in widespread forms in conformity with the local cultural emphasis.

Of interest also is such a question as why the Vagina Dentata is so widespread while the Blue Beard story is not. And this question illustrates the use for sexual psychology which can legitimately be made of mythological material, because the answer may lie in a greater male fear of sexuality, but it may lie in the fact that most of the elaborations of culture, such as myth and rite, are controlled by men. We can turn from the discussion of negative considerations to:

Child Nurture and Adult Sex Behavior.—Detailed correlations of the suckling, weaning and other child nurture habits of a few primitive people with their adult sex patterns, suggest that this is a fertile field of investigation for students of sex.

Among the Arapesh people of New Guinea, the suckling process is delighted in by mother and child; the mother titillates the child's lips with her nipple, plays with the body of the child and encourages it to play with her body and

with its own body. The child is suckled or held in a suckling position in excess of its demands for nourishment. There also exist among the Arapesh many highly stylized ways of playing with the lips, which the developing unweaned child learns from other children. This lip play is continued until puberty for boys and until marriage for girls. Also an unusually easy expression of affection and physical intimacy is encouraged. The father and mother play similar warm permissive rôles and the child develops a reliance upon warmth and intimacy.

The marriage pattern by which a boy of thirteen or fourteen is given a girl of seven or eight as his betrothed wife, whom he is then expected to nourish and care for until she is grown, perpetuates this tender parent-child relationship picture. The marriage which is consummated without any public recognition after both partners have obtained their growth, is characterized by oral foreplay—from which, however, any oral genital contact is rigidly excluded—by gentleness, a lack of a specific orgasm in women, and no recognition in either sex of direct sexual desire that is not dependent upon a defined domestic situation. The parents observe without hardship a pregnancy and lactation tabu, which covers a period of two to two and a half years for the mother, and of at least a year for the father, even if he has a second wife.

It is possible to contrast with this Arapesh pattern other very different ones. Among the Mundugumor people of New Guinea, children are rejected, suckled by women who remain in a standing position and feed them in grudging discomfort, and interdict all expressions of playfulness or affection. The child develops a purposive fighting attitude towards the suckling situation. The social forms are developed upon a strong pattern of intra-sex antagonism, rivalry between brothers and between father and son and much fighting over women. There is a sexual foreplay pattern of scratching and biting, and an

explicit emphasis upon desire and upon specific genital satisfaction, especially for women.

Among the Manus, the mother is the disciplinary parent, the father the playful, indulgent one. The child is fed efficiently but without playfulness or dallying and the mother early begins a routine of strict sphincter training. The child transfers its affection to its father while it is still being suckled, thus making its first disassociation between affection and physical gratification.

The girls are partially rejected by their fathers when they reach the age of five or six because they are now betrothed and subject to embarrassing avoidance tabus; the boys continue to be attached to their fathers and at their fathers' deaths turn their attention to their own children for all overt expressions of affection. All physical intimacy, except with very young children and in certain prescribed relationships between blood relatives, is strictly forbidden, and all present and anticipated marital relationships are characterized by avoidances and tabus.

Marriage itself is a hostile, embarrassed relationship within which strict sexual morality, under a religious code administered by female mediums, is enjoined. All foreplay is forbidden and the sex relationship approximates to rape. What affection there is between adults is reserved for the brother-sister tie, and the only uninhibited sexual expression possible for men is with occasional female war captives who are kept as prostitutes and communally raped. Women are characteristically completely frigid up to the birth of the first child, and preserve throughout life a hostile attitude towards all sex expression.

These brief summaries may serve to show the way in which distinct and different patterns of sex behavior are to be found in significant interrelationship in the standardised genetic development of the individual in different cultures. Most of the study of the sex behavior of primitive people has been limited to instances of license or periods of tabu, to

details of homosexuality or of various forms of circumcision. The item under consideration has been torn out of its cultural context, and rendered irrelevant by our ignorance of the other related aspects of sex behavior in each culture. Such discussions only point the moral that there is a wide variety of sexual practice on any given point, and that the human organism can adjust to any one of them. But no isolated item can be taken as actual data upon the sex patterns of a given people.

For example, a widespread New Guinea pattern is a ceremony of initiation for boys. Among the Iatmul tribe of the Middle Sepik this is characterized by a frank inter-age hostility and congruent sadistic practices. The same rites occur among the Arapesh reinterpreted as hygienic promotion of each individual boy's growth, and the elements of grudging admission to adult status are lacking. But such contrasts as these between the different contexts in which an externally similar institution may be set are only apparent if a complete study of each culture is made. All comparative treatment of single points tends to obscure them.

Sex and Various Forms of Marriage.—A considerable body of evidence has been accumulated to show a close association between matrilineal forms of marriage and a more flexible sexual morality. While such a connection is frequent, it is not inevitable (e.g., the *Navajo*). It is probably more relevant to regard the greater restrictions placed upon freedom of female sex behavior, under patriliney, as one aspect of the legalized buttressing of a father's relationship to his children and so to his children's mother. But marriages may be dissolved with equal ease in Samoa, which is patrilineal but in which a woman retains a residence and subsistence claim upon the land of her own blood group, or in Zuni which is matrilineal, and where the house and the harvest are owned by the matrilineal household.

Great emphasis has been laid upon the

various elaborate ways in which primitive societies regulate marriage, by the creation of exogamous divisions, by marriage classes, by prescribed marriages, etc. These patterns vary from the simplicities of marriage forms in which the only emphasis is upon the primary incest tabus, to societies which have so categorized the members of each sex in regard to possible marriage that there may be no woman whom a given man can legally marry.

The more elaborate regulations can be partially understood as tending to limit competition among males over females, and, specifically, in Australia, to limit the competition between the father and son generation. But the limitation of such competition can be as effectively accomplished by other devices, such as child betrothal, or the focussing of the father's ambition upon arranging the marriage of his sons. Among peoples of comparable economic development we find examples of very casual marriage arrangements and very elaborate ones, and each degree of complexity may occur in conjunction with extreme limitation of sex behavior or the permission of a great deal of expression.

It seems that these various elaborate marriage forms are better understood as primitive political structures among peoples whose social-economic life is dependent upon the patterning of blood and affinal ties. These forms do to some extent channel sex relations, but only as two closely related but not dependent phenomena will have an influence upon each other. It must be remembered that marriage is primarily an institution for the rearing of children and that it may have a greater or less effect upon sex behavior.

These political forms will channel sexual relations in the same way that art forms may channel religious thought; they are two closely related but independent traits which have strongly influenced one another. In the same way incest tabus may be regarded as either primarily concerned with the regulation of sex behavior, or as a social

device for forcing intermarriage and socio-economic coöperation between different families.

Different Phrasing of Sex.—No people has ignored the problem of sex, and each has surrounded its expression with definite permissive and restrictive patterns. But there are the most striking contrasts in the way in which different societies conceptualize sex. The Arapesh regard sex relations with a long-known and loved wife as pleasant, but not to be indulged in when they conflict with the antithetical goods, food, growth, and magic for food and growth, and they have the greatest fear of sex relations which are casual, sudden, or engaged in with a stranger, expecting such relationships to end in black magic and death.

The Samoans phrase sex as they phrase all activity, in terms of a graceful pattern; sex is a game at which young people may play and attain virtuosity, but which should not be permitted to take too much of an adult's time or involve him in unseemly disputes with others. There is a highly detailed and sophisticated interest upon technique of love making, and no emphasis upon personality.

Among the Omaha Indians and the Manus a rigid puritanism, a socially enjoined female distaste for sex, is combined with a male glorification of group rape as the ideal sexual experience. The sex adventure may be regarded as a relatively individual matter, as among the Zuni, or each slightest sexual involvement may be regarded as an affair which effects the entire community, as in Manus. Promiscuity may be a game—as among the Eskimo—or a serious part of religious ceremonial as among the Kiwai. Sex activity may signify an ecstasy identified with religious experience or all religious observance may be marked by abstinence, as in Hawaii and the Marquesas. Sex may be a major thread, or a neglected one, an individual matter or a group matter, may be regarded as play or as work, may be definitely religious or definitely profane.

There have been so many examples collected from primitive society of the standardization of social attitudes towards the reproductive functions of women, in which these capacities are regarded as sacred and dangerous, that there is a tendency to regard such attitudes as characteristically primitive. There are, it is true, widespread areas, in different parts of the world, where these functions are treated with the full connotation of the word *sacer*, or with stress upon one aspect of the ambivalent attitude.

A girl at first menstruation may be uniformly dangerous, as among the Carrier Indians, or specially sacred and able to give blessings, as among the Apache. Or the whole situation may be turned so that it is the girl herself who is in danger, as among the Gilbertese or the Manus, or specially open to supernatural blessing as among the Thompson Indians. Two of these attitudes may be combined together, as in the case of an Arapesh menstruating woman, who is dangerous to the hunting and food-growing capacities of a normal, healthy male, but beneficent and powerful to heal a man who has become the victim of black magic. The mere presence of the menstrual seclusion hut in any culture is no definition of the whole local attitude: a sense of the dangerousness of menstruating women may be combined, as it is among the Winnebago, with a regular institution of courtship and liaisons in the menstrual huts.

The primitive material suggests that there are a series of frequent and recurring attitudes towards the various aspects of female reproductivity which may be very differently organized in different cultures. Menstruation and the blood of child-bearing may be associated together and so child-bearing becomes antithetical to fertility and success in other departments of life—a frequent association of ideas in Oceania—or human birth may be regarded as favorable to animal and plant life, as in Indonesia and parts of Africa. Or

menstruation and sexual relations may be assimilated into a puritanical shame pattern, from which birth may be excluded, and the latter may not be mysterious or dangerous in any way.

It is not possible, at the present stage of knowledge, to establish any connection between other aspects of culture and these various attitudes towards women's reproductivity, or even of sexual behavior. We can only say that they are characteristic of many cultures, but differently integrated in each.

The Conception of the Normal.—The definition of some forms of sex practice as normal and human, and the interdiction of other forms as abnormal, criminal, or bestial, has very wide variations. We may find homosexuality permitted to the male sex but denied to the female, as in Manus, and this pattern further developed so that the male invert who dresses as female, may be accepted if he plays the active rôle, but despised if he plays the passive, as among the Dakota. Or homosexual play may be permitted to both sexes in societies which take a tolerant and lively interest in sex but do not regard the matter seriously enough to standardize it socially. Among the ancient cultures of South and Central America there are many illustrations of legislation against it.

Among the Arapesh it was not recognized as a possible pattern of behavior except by the few individuals who had been away from the tribe as work boys. Homosexual practice may be standardized as a compromise between the sexual needs of unmarried men and the monopoly of women by the old men, in which case young boys may be taken as substitute wives, as in parts of Australia.

There seem to be indications that the occurrence or non-occurrence of homosexual practice is dependent upon, first, the cultural recognition of the practice and the degree to which the culture institutionalized it, second, upon such contributory cultural attitudes as: a strong preoccupation with sexual practice as distinct from personal relations, or the obverse form, a strong preoccupa-

tion with personal relations, in disregard of any specific heterosexual practice, a tendency to regard men as needing a sexual partner in societies which have limited the accessibility of women, and a standardization of the behavior and attitudes of the two sexes as very different so that intra-sex relationships between diverse personalities easily imitate inter-sex relations, and so that some individuals may be forced by peculiarities of character formation into taking the more congenial rôle of a member of the opposite sex, as among those American Indians where war and bravery were heavily insisted upon for men.

There is the same diversity in regard to other variants of sexual practice. Attitudes towards onanism vary from Jemez in which children are encouraged by their mothers to masturbate, to shamed interdiction in Manus, and the Arapesh substitution of socially approved oral manipulation until puberty, and self-inflicted hygienic cutting of the phallus thereafter. The use of various masturbatory devices is also reported scatteredly from various parts of the primitive world. Among the Tehambuli in New Guinea the women use small smooth oval stones; the men resent these and try to steal them in order to make them into love charms.

The variations permitted in the sexual act itself and usages in regard to foreplay have the same kind of gamut. The Manus deny all foreplay to the husband, who is not even permitted to touch his wife's breasts; the Arapesh interdict all oral-genital contacts but emphasize other forms of oral and mammary manipulation, and have specialized the cheeks as erogenous zones; the Samoans recognize and practise a wide variety of foreplay techniques but have standardized only one position of intercourse, face to face. The material is adequate to show that all standards in these respects are culturally determined, but more data are needed in regard to the particular patterns practised in any given culture and

their integration with other aspects of sexual development.

Pre-marital Conception, Birth Control and Abortion.—Although many primitive people permit pre-marital intercourse, a great number of those who permit it strongly forbid pre-marital pregnancy. The lack of realistic adjustment here is striking, and varies from a demand that the unmarried mother kill her child, after which she continues as a normal member of society, to the rigid usages of the Gilberts in which she was killed. Several perplexing instances, notably from the Trobriands and Samoa, have been reported in which great pre-marital freedom results in strikingly few pre-marital pregnancies. The absence of conception in these cases has been laid to the possible influence of promiscuity, and alternatively to a possible variation in the length of a latency period following the beginning of menstruation. It is difficult to consider the matter until further material on age of first menstruation and age of first pregnancy in these groups is known.

Actual contraceptive practice occurs occasionally in primitive groups, and varies from the *Mika* operation of the Australian aborigines, an operation on the urethra which results in the ejection of semen *ex vaginas*, an operation which was performed on the lazier and less efficient youths of the tribe, through the female use of moss sponges of chopped grass in Central Africa, and a more widespread knowledge of *coitus interruptus*. Various instances of the use of medication to produce permanent sterility have been reported from primitive tribes, but no one of these has been combined with a confirmatory analysis of the drug used, and most of these practices are patently magical in nature.

Abortion occurs among a great number of primitive peoples and varies from the use of drugs which the natives believe to be poisonous, to a large number of definitely effective manipulatory methods. The Tchambuli practice by

which a girl, pregnant by someone other than her betrothed husband, consults a magician, who then tells her future father-in-law, who with his other relatives harries the girl, who runs down ladders, sleeps in the bush and acts with great violence and self-injury, resulting usually in abortion, is an interesting example of the way in which magical practice may be made socially effective. Social attitudes towards abortion vary from casual acceptance to strict interdiction.

One physiological potentiality of the human being which our own culture has neglected to actualize, is the custom of some New Guinea tribes of developing the secretion of milk in non-pregnant women, even in women who have never been pregnant, when such women wish to adopt a child, by feeding them large quantities of cocoanut milk and permitting a sucking child continually to manipulate the breast.

Sex and Age.—There is a tendency to regard initiation ceremonies as a characteristic of all primitive societies and to interpret such ceremonies as the introduction of the adolescent into sexual and social maturity. Here again we must recognize that initiation, religious or social, is a widespread institution, which may but does not necessarily coincide with the prohibition of sex activity before initiation and its permission afterwards. Initiation ceremonies may prepare a boy for war as in Manus or Dobu, and have no relevancy to a change in sexual status, or they may be concerned primarily with religion, as among many American Indian tribes.

Formal initiation into adult sexual status, or as a prerequisite for such status occurs in various parts of the world, but it is not a characteristic of primitive society, and there are instances (e.g. Trobriands, Samoa, Siberia) in which childhood sex practices shade directly into adulthood with no ceremonial whatsoever.

It is possible to make one generalization about the various mutilations and operations on the genitals which form

part of initiation ceremonies in so many places.

Such operations, clitorodectomy, infibulation, etc., on girls have only been reported for regions where there is a firmly entrenched pattern of comparable operations on boys, such as incision, sub-incision, circumcision, and the more extreme Australian operations. It seems reasonable to assume that the operations upon the boys—which also occur in regions where there is no comparable development in the treatment of girls—are primary, and that the girls' operations have developed as an extension of this pattern.

In the cultural attitudes towards the relationship between sex and age, there are marked contrasts. Societies which are equally tolerant of sex experience in adults may take opposite attitudes towards children's experience, thus the Trobriands permit it and the Samoans prohibit it.

The Trobriands, Jemez and the Ba Thonga, to select examples from three widely separated areas, permit free sex play to children. The elimination of pre-marital sex expression may take the form of rigid suppression, with strong punitive sanctions, as in Manus or the Gilberts, or it may be one resultant of a type of education which makes both boys and girls loathe to take any initiative and which directs their energies into other channels, as in Arapesh, or there may be a combination of interdiction and a chastity belt which insures a girl legal redress in case of assault, combined with a high standard of romantic love, as among the Cheyenne. Parents may thrust their children explicitly into sex experience, as do the Dobuans, who force their pre-adolescent sons out of their parents' sleeping house, to wander in the cold, ghost-ridden night until some girl invites them in. Sex experience may be considered appropriate only between contemporaries and this attitude may find expression in a refusal to discuss sex across generation lines, as in Samoa, or in the insistence that remarrying

widowers marry widows of their own age group, as in Manus. In estimating the birth rate and population of any primitive group such attitudes as the latter must always be taken into consideration.

On the other hand, the inter-generation relationships of teacher and novice in sex practice may be selected for cultural standardization, as among the Banaro, where each girl is initiated and bears her first child to her future husband's father's ceremonial friend, and the wife of this friend initiates the future husband into sex. The hostility of the passing generation to the sexuality of the young may find expression in such a form as the cruel ceremonial defloration of the young girls by the older women, among the Valenga. On the other hand, the father's sister may sleep with the young couple and instruct them in sex practice.

Sex expression may be regarded as peculiarly appropriate to the young, as in Samoa, or as most important when it is dignified by the participation of the responsible middle-aged, as in Ba Thonga, or an experience which becomes increasingly pleasant even beyond the climacteric, as in Jemez. In all of these instances it is clear that we are dealing with no necessary connection between age and sex, but with the cultural patterning of this relationship.

The Rôle of Each Sex.—The sex behavior appropriate to each sex is subject to very extensive cultural variation. Although, as a rule, some of the dictates of the differing physiques of the two sexes are followed—e.g., more frequent emphasis upon virginity in girls, which is objectively demonstrable, than in boys where no such objective check exists, or more frequent assignment of the active role to men, or greater emphasis upon the orgasm in men than in women—still there are enough instances in which these congruences between physiological make-up and socially defined functioning are ignored and even reversed, to demonstrate how possible it is for a social pattern to

dominate what would appear to be a biologically determined direction.

The Kiwai Papuans emphasize virginity for boys but not for girls; the Arapesh lay great stress upon the preservation of a boy's virginity until he has attained his growth, while less definite stress is laid upon a girl's abstention from sex and no emphasis whatsoever is laid upon virginity. The Arapesh assign special ceremonial rôles to virgin boys which are comparable with those assigned in most cultures to virgin girls. In the initiation of sex experience it may be left to the woman to make all the first advances, or the woman may be given the larger rôle but the man permitted to make a few slight bids for attention, as among the Tchambuli, or either man or woman may initiate sex with equal freedom as among the Arapesh.

Desire may be regarded as a male attribute absent from all good women, as among the Manus or the Omaha, or it may be attributed to women instead of men, as is the case in Tchambuli where the phrase "Has she no vulva?" has no male equivalent in popular use. Or women may take explicit pride in their sexual capacity, with definite specialization, as do the Jemez women in centering pride on their breasts.

Fear of loss of potency in the male seems to occur more often as a fear of loss of war-like or magical efficiency than in culturally explicit attitudes towards impotence, although this does occur, for example, in Africa. Seduction of a woman may become, as it does in Arapesh, an ultimate form of confidence in her and earnest of honorable intentions, instead of the reverse and commoner interpretation in which a man in seducing a woman takes advantage of her. Barrenness is institutionally attributed more frequently to the woman's lack, perhaps because opportunities to check up the matter are so lacking in many cultures, but there are also records from polygamous societies, or societies in which divorce and remarriage are frequent, in which the

members of the society have identified men as sterile.

Specific Beliefs about Sex.—The accuracy with which different primitive peoples conceptualize such points as the relationship between the sex act and pregnancy has been the basis for much discussion. Although a great number of conceptualizations which are unacceptable to our present state of knowledge occur, there is no reason to believe that any one of them accurately represents ideas which flourished in man's primordial state of ignorance, and so can be held responsible for certain forms of social organization and marriage. The Trobriands and the Arunta are classic examples among whom the specific contribution of the father is ignored in favor of supernaturalistic explanations which postulate reincarnation.

In Rossel Island, on the contrary, the rôle of the father is over-emphasized, and the mother is regarded as the carrier of a complete and autonomous egg. There is evidence for saying that such beliefs are congruent with the religious and social emphases of the culture and are most significant in those terms.

Beliefs that the fetus is composed of menstrual blood and semen, that women's vaginal lubricant is semen, that semen is milk, that menstruation occurs only once naturally and is subsequently a result of intercourse—all such beliefs are of interest only when it is known what relationship they bear to the other parts of the particular culture, otherwise they remain merely dramatic examples of the strength of culturally determined attitudes as opposed to exact observation of natural facts.

Theoretical Use of the Material.—Theoretic discussions of sex in primitive society have ranged about primitive matriarchy (Morgan, Hartland, Bachofen, Briffault), primitive monogamy (Westermarck), the significance of primitive ignorance of paternity (Lang, Malinowski, Jones), the collection of materials showing the frequent elaboration of sex as a danger situation (Crawley), and theories

which equate control of sex with advances in civilization (Unwin).

The most dynamic theoretical uses of the material have been made by the Freudian school, beginning with Freud's hypothesis which attributes the origin of cultural forms to a primordial conflict between father and sons. The attempt to project this situation back into the dawn of history may be taken as a symbolic statement of the hypothesis that the Oedipus situation is basic in all cultures. Malinowski's *Sex and Repression in Savage Society* is the classic formal refutation of this hypothesis, showing how fundamentally Trobriand social institutions differ from patrilineal ones. Roheim has made some attempt to apply the psycho-analytic hypotheses in actual field work in primitive society, but he has ignored the basically genetic emphasis of the Freudian theory, and so has given inadequate recognition to the importance of the variations in this process which occur in different cultures.

Further Research Needed.—The present indications are that the most fruitful line of sex research in primitive society is the abandonment of all surveys of isolated beliefs or practices in favor of concentrated studies in each society of every aspect of the regulation of sex behavior from birth to death.

Primitive societies, because of their homogeneity and integration, offer unequalled laboratories in which to test out the bases of functional consistency between different possible aspects of the patterning of sex behaviour. Such investigations might reveal, for example, basic incompatibilities between unconditional permission to the child to suckle freely and the capacity to rape, or an equally functional inter-relationship between rape and rigidly enforced sphincter training.

Cultures must be regarded as human behavior which has been institutionalized in "time binding" terms, and is therefore much more amenable to objective study and record than is the behavior of any individual. A study of primitive sex behavior from this point of view should add greatly to our knowledge of the potential patterning of sex behavior.

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M. M.

APELLA (*a*, deprived of, and *pellis*, skin). One whose prepuce does not cover the glans, or one who is circumcised. The adjective is *apellous*.

Among the Romans, *Apella* was the name of a circumcised Jew. Celsus has a chapter on the method of covering the exposed glans penis (*De Medicina*, vii, 25). Such reparative surgery was needed by Jews who wished to hold office among the Romans, and could not do so if they lacked a prepuce.

APHASSOMENOS (I touch, I feel, I handle). The digital examination of the genital organs of the female for diagnostic purposes.

APHORIA, sterility in the female. *Aphoria impercita*, attributed to frigidity. *Aphoria impotens*, due to defect of the conceptive power. *Aphoria incongrua*, unresponsiveness of the conceptive function to the seminal fluid. *Aphoria paramenica*, caused by menstrual disorder. *Aphoria polyposa*, the result of a uterine polypus.

APHRODITE (VENUS). Aphrodite, or Venus, was the goddess of love, of that sensual desire which is love's physical characteristic, and of the beauty that provokes such desire. The mythologic accounts differ as to her birth and parentage. One has it that she was the daughter of Zeus and Dione. Another, more poetic version—and it has been made much of by poets—was to the effect that she was born of the foam of the sea.

Homer, it is to be noted, seems inclined to favor the former explanation. Only once, in the fifth *Homeric Hymn*, does he allude to Aphrodite as the "foam-born," her common epithet in later times. Hesiod, too, lends support to this version.

According to the other account, Aphrodite, once born of the waves, was wafted by Zephyr to the Isle of Cyprus, which is regarded as her native shore, Venus to poets being forever after "the Cyprian." The Seasons there attired her and conducted her to the assemblage of the gods. All the Olympians promptly fell in love with her, and each insisted she should be his wife, the dispute being settled by Jove, who conferred her upon the ugliest member of the pantheon, the deformed and limping Vulcan, forger of thunder-bolts, whose services in this respect had earned Jupiter's gratitude. But Venus, for all of that, became Mars' paramour.

The beauty and love goddess is the heroine of numerous mythologic adventures, particularly in connection with her small and impish son, Eros, or Cupid. One day, accidentally wounding herself with an arrow from Cupid's quiver, Aphrodite beheld Adonis and straightway fell in love with him.

This well known episode has given rise to Shakespeare's poem and countless other literary works and allusions, including the lines in Milton's *Comus*. In the turn which Shakespeare gives it, which is not its classic form, the Venus and Adonis myth becomes somewhat of a study in pathologic love. The tale as the ancients told it was purer in outline, stressing the timidity and even skulking cowardice which love, especially in the woman, may inspire on behalf of the loved object, as when

Aphrodite counsels Adonis: "Be brave toward the timid; courage against the courageous is not safe. Beware how you expose yourself to danger and put my happiness to risk." And the conclusion of the adventure, with Adonis slain by the wild boar and changed into the Anemone or wind-flower, has to do with the essentially fleeting quality of the sexual passion.

An equally famous incident is the Judgment of Paris and the awarding of the Apple of Eris, or Discord, to Aphrodite over her rivals, Pallas and Hera. As a reward, Paris has Helen, Menelaus' wife, as his love, and the Trojan War ensues.

Among the Greeks, two Aphrodites were distinguished: the Aphrodite Uranios, or "Heavenly" Aphrodite, and the Aphrodite Pandemos, or "Aphrodite of the People." The former was the goddess of a more intellectual and spiritual love, that of the philosophers, while the latter was concerned with the satisfaction of sensual desires. The Aphrodite Pandemos, indeed, was little if anything more than an embodiment and personification, a deification, of the act and trade of prostitution. Her rites, like those of Adonis, were of Phœnician origin, and were believed to have been instituted by Theseus. Needless to say, Aphrodite Pandemos lived up to her name in the matter of popularity, and her statue was the first to be set up in the *agora*, or public square. The fourth day of every month was set aside for her worship, and the receipts from prostitution on that day went to her temple.

Plato gives us this statement, with reference to the two Aphrodites: "There are two Aphrodites, the one very ancient, without a mother, and the daughter of Uranus, from whom she gets the name of Uranios; the other younger, daughter of Zeus and Dione, whom we call Aphrodite Pandemos." (See Plato, *Symposium*, 180 E ff; Xenophon, *Symposium*, 8, 9. Plato, it will be observed, attributes the Zeus-Dione parentage to the Aphrodite Pandemos, in distinction from the Uranios.)

The Greeks further distinguished a number of minor Aphrodites, carrying,

as with Eros and the Erotes, the process of pluralization to an almost indefinite degree, the resulting tendency being to weaken ever more and more the original concept. (See LITERATURE AND LOVE, section on "The Greek Orphic View" and following.) Aphrodite Callipygos, for instance, was Aphrodite "of the beautiful rump"; Aphrodite Scotia was the Venus "of the dark"; Aphrodite Melainis was the "dusky Venus"; etc.

It is under the name which the Romans gave her, that of Venus, that Aphrodite is best known to the modern world, including that of science. See Cicero's *De natura deorum*, iii, 23, 59ff; *id.*, *De divinatione*, i, 13, 23; *id.*, *Orator ad Brutum*, ii, 5; *id.*, *In Verrem*, ii, 4, 60, 135; Varro, *De re rustica*, i, 1, 6; Lucretius, 1, 2; Horace, *Odes*, i, 30, 1, etc.

Terence employs the word Venus in the sense of sensual love or venery, in his famous proverb, quoted by Rabelais: *sine Cerere et Libero friget Venus* ("without Ceres and Bacchus"—i.e., without food and drink—Venus grows cold).

Among the attributes of Aphrodite was her love-inspiring *cestus*, or girdle. The swan and the dove were sacred to her, as were the myrtle and the rose.
S. P.

ARETINO, PIETRO (1492-1556), Italian author, was born on Good Friday, 1492, in Arezzo, a hill town between Florence and Perugia noted for the pure Tuscan of its dialect and for the turbulence of its inhabitants. His birthplace was a charity ward and though he liked to pretend that he was the bastard of an Aretine nobleman, his father was a poor shoemaker named Luca. His mother, Tita, was a low class woman of great beauty. She was Luca's wife.

His youth was stormy. "All that I know my mother taught me," he says, adding that he stayed at school "only long enough to absorb the elements of our Holy Religion." To use a modern phrase, he merely went through grammar school. Then he was expelled from Arezzo for what was considered a sacrilegious sonnet, and he took up the life of a vagabond in north Italy. He became a street singer, boots at an inn, a

tax-collector, a mule-driver, a hangman's assistant, a courier, a pimp, a mountebank, a cadger, "the devil and worse." Among other places he visited was Venice where in 1512 he published his first and very juvenile book of poems.

In 1516, he came to Rome, where he found employment as (probably) an under footman on the staff of Agostino Chigi, the banker. There he stayed, loathing his menial position, making friends (for he had also been an art student) with Raphael, Giulio Romano and the other painters employed by Chigi, and writing in his spare time, until a witty and in part ribald satire, *The Testament of the Elephant*, made its chief victim, Pope Leo X, laugh heartily. Leo found a place for him in his court, and the first upward step was thus taken.

In 1521, Leo died. His cousin, Cardinal Giulio de' Medici was a candidate to succeed him, and to this man Aretino lent his vigorous support, writing, as the cardinals moved into conclave, a whole series of witty, timely, mordant and sarcastic pasquinades—called thus because they were nailed up under the statue of Master Pasquino near the Piazza Navona. These, sometimes indecently, and always scurrilously, demonstrated, in sonnet form—and actually they were *sonetti codati*, elongated "sonnets with a tail to them"—the disaster and the ruin of electing any other prelate than "il Medici."

But unfortunately the assembled princes of the church did not heed this advice, and after a long deadlock, they fell back on a dark horse, Adrian Florenz of Holland, the Emperor's tutor, a good man of simple tastes, who had the somewhat unfashionable idea that the Pope was not a temporal ruler but the head of a religion based on morals. Leo's courtiers fled in consternation, among them Aretino. First he went to Bologna, then to Florence, where he reminded Giulio de' Medici of his many services. Giulio did not dare befriend him openly, but did give him letters of

introduction to the Marquis of Mantua, and later when he grew restless there, to his cousin, Giovanni delle Bande Nere, who was perhaps the greatest general of Italian stock since the Caesars. Both these important men received Aretino cordially and treated him as an equal. This added self-confidence to his cleverness and was an important factor in his career.

Adrian died in 1523, and this time Cardinal Medici won the office he aspired to, taking the title of Pope Clement VII. Aretino was at Reggio, carrying on one of his intrigues with a kitchen maid, but he set out for Rome as quickly as possible. His patron Pope, he looked to make his fortune. But it turned out quite otherwise. The painter, Giulio Romano, and the etcher, Marcantonio Raimondi, had collaborated on a series of indecent etchings known as "The Modes of Intercourse." Marcantonio was flung into jail. Aretino used his influence to get him out, and he then suffered a brain storm. For each one of the indecent paintings he wrote a filthy sonnet. Even Renaissance Rome was scandalized and he was obliged to flee, which he did after issuing a manifesto which was the baldest, most defiant defense of pornography ever written. He went to Giovanni delle Bande Nere who was at Fano living the life of a buccaneer, but even that unsqueamish hero felt obliged to rebuke him, not, however, on the grounds of morals so much as policy.

Then when that affair had blown over, and he was back in Rome, he involved himself in another affair. Possibly irritated by the part played by Giovanmatteo Giberti, the Papal Datary, in his recent disgrace, he started writing pasquinades against this gentleman. Giberti's answer was not equivocal. He hired a certain Achille delle Volta to assassinate Pietro. Pietro was wounded but not killed and when he recovered he decided Rome was not healthy for him. He had just completed his first comedy, *La Cortegiana*, and carrying this as a good-will offer-

ing, he set out for Mantua. But when he reached there, he learned that war had broken out and that Giovanni delle Bande Nere was near Pavia with his troops. This was better than a secondary court, and Aretino rushed to join him. Giovanni was so glad to see him that he promised to make him Lord of Arezzo.

Had Giovanni lived he might have done so. But a chance shot from a German arquebus crushed his leg and he died in excruciating agony three days later. Aretino paused merely long enough to describe his death and to celebrate his character in a straightforward, genuine, and moving letter that is perhaps the finest thing he ever wrote. Then he set about to reorganize his own affairs. He sounded the Marquis of Mantua to see if he would become his protector, but it was one thing to send letters and presents to the best friend of a rising young general, and another to give refuge to an enemy of the Pope. The Marquis, therefore, welcomed Pietro, and then wrote his ambassador to find out if Clement wished him murdered. In the meantime, to keep Pietro quiet, he gave him 100 crowns. Pietro pocketed the crowns and set out for Venice. He would feel safer having water between him and the mainland. He reached the island city on March 27, 1527. He was then almost exactly thirty-five years old.

The flight to Venice marked the turning point in Aretino's career. He was not a nonentity when he left the mainland, but neither was he more than perhaps the most ebullient of those literary free-lances who could live by their wits just as long as they could find a patron. Now, almost imperceptibly, he was drifted toward the conclusion that he did not need to have a patron, or rather that by having many patrons, he could be free of all of them. The Siege of Rome showed him the way. When in 1527, German and Spanish troops sacked the city with atrocities reminiscent of the Visigoths he wrote the Pope arrogantly reminding him of what happened

to his enemies, and he wrote patronizingly to the Emperor Charles V (whose troops those Spaniards and Germans were) urging him to be merciful. Both letters were taken seriously. The Pope publicly grieved that he had let Aretino be chased from Rome. The Emperor made peace with Clement at Bologna.

Then almost every big or small ruler in Europe tried to win his favor. Henry VIII of England; Queen Bona of Poland; Keyr-ed-Din, King of Algiers; and the Dukes of Ferrara, Florence, and Urbino, were merely the most prominent. By 1537, he was able to reject offers made by the King of France (whom he had first met at Pavia in 1524) on the ground that he did not keep his promises. A year later, he was on the payroll of the Emperor. And when in 1543 Charles V passed through Peschiera on his way to Germany, he sent for Aretino and when he had arrived treated him as the guest of honor, seating him at his right hand. Kings had recognized poets before, but it was not as a poet that Aretino appeared, but as a man who controlled public opinion. This was, therefore, the first tribute in history to the power of the press.

In the meantime Pietro lived, as he had always wanted to live, like a *mag-nifico*. The stuff to do it with poured in to him from every corner of the globe. He hired a palace on the Grand Canal. He set up an Oriental harem. He begat daughters and he treated very tenderly the daughters he begat. He patronized literary adventurers, calling them his secretaries and helping them to get their works published until they started poaching on his preserves. Then their quarrels were notorious and vituperative. (As a result of one of them, he was obliged to flee Venice for a few weeks on more or less framed charges of sodomy.) He did not pose as, but became actually, the friend of artists. Notable was his friendship with Titian, whose famous portrait of the huge man with his gold chain (given him by the King of France) and his voluminous

black beard is an immortal tribute to it. Though he played this friendship for all it was worth (and so did Titian) it was a real friendship. He understood Titian as a man and as an artist. Indeed it was as art connoisseur (not so much as art critic) that he showed his finest side. For the purely sensual values of art—the effect that form, color, composition, light and shade, have on man physical as opposed to man aesthetic—he was the first man thoroughly to comprehend.

After his meeting with the Emperor, Aretino's life never reached another dramatic height. How much he had achieved he was able to demonstrate when he brought out the *Letters Written to Messer Pietro Aretino* (1551) wherein were reprinted communications from almost every ruler, prelate, nobleman, soldier, scholar, writer and artist of the period, and he showed also that he had not lost all his powers when he rescued Sansovino from the disgrace into which he had fallen when a building he had designed collapsed owing to faulty construction. But a quarrel with Michelangelo was not only ignominious but unsuccessful; twice foreign ambassadors forced him to retreat cringing from high-handed positions he had taken; while Cardinal Ercole Gonzaga, who now ruled as regent in place of his old patron, the Marquis of Mantua, showed the new tendency by actually laughing at his demands.

A few small honors—such as when Arezzo created him honorary chief magistrate in 1550—took some of the sting from these rebuffs, but his last bid for important honors met with failure. In 1550, a fellow Aretine was elected Pope Julius III. A few summers later Aretino set out for Rome, hoping to be made a Cardinal. He was received cordially, but the red hat never came his way. Once more he retired to Venice. In 1556, Anton Francesco Doni, ex-secretary and present rival, launched a bitter attack. Among other things he predicted that "in this year of '56 you will die." His prophecy came true. On

October 21, Aretino fell dead of apoplexy. According to legend he was laughing at the feats of his sisters in a bawdy house where they were employed and so laughing fell over backwards. But his sisters would have been somewhat too old for such activities. And anyway they happened to be dead.

It is not, however, merely the picaresque episodes of this amazing life that make it worthy to be set down. It is their very great significance. Aretino was a type man of the Renaissance, quite as much so as Pope Julius II, or Lorenzo the Magnificent, or even Leonardo da Vinci. He was a ready-made example of what opportunity can accomplish in an age of expanding ideas.

Three centuries or at least two before the technical beginnings of *liberté, égalité et fraternité*, he was born without any advantages whatsoever, yet so deeply was he endued with dynamic potency that he rose by sheer force of energy to pride of place and universal acknowledgment. His letters went to Popes and Kings and what is more important Popes and Kings answered them. As we have already noted, he sat at the right hand of the Emperor. Ariosto called him "The Scourge of Princes." Noble ladies—even virtuous noble ladies—sent him presents so that his letter of thanks mentioning their names would appear in his next volume. Noble gentlemen sought his dedications, paying good money for the same. He called himself "a free man by the grace of God" and it was as true as it could be in an age of fawning and of adulation. He was "The Fifth Evangelist" and "The Secretary of the World" and both titles suited him. He was the first blackmailer—since his power lay in his threat to speak unpleasant truth—and the first journalist and the first publicity man. No other man of letters had in his own lifetime quite his influence except Voltaire.

As a writer he was not quite so good as the age in which he lived thought that he was, but he does not, either, deserve entirely his present reputation.

For, though certainly, a great deal of his writing was extremely outspoken and some incontestably indecent, it had other qualities. When it was not studiously ornate, it was straightforward, vivid, and very real. He attacked cant. He attacked affectation. He wanted to use language as it was then spoken in Italy, and not as it was learned out of books, however excellent.

"Make use of the phrases your own ears have taught you," he wrote Niccolo Franco. "People are sick of 'needs be' and 'else thou shouldst' and the sight of them in a book affects readers just as would the sight of someone who appeared in the piazza clad as a knight of old. We would say that he was either mad or masquerading." He admired Boccaccio and Petrarch, but he did not want to use their words. His pen was a creative instrument quite as much as his scalpel of a dissector. And all that he really put his heart into bloomed with life.

His products were voluminous. He wrote sonnets, satires, *terza rima* poems praising one person or another, fragments of epics, lives of the saints, parodies of prophetic almanacs, letters, dialogues, and plays. Much of what he wrote was worthless. Two thousand or three thousand of his letters were published and of these all but forty or fifty are, as befits the work of a journalist, as dead as last week's newspapers. But these forty or fifty are not only among the best writings of the Renaissance: they are as brilliant and as readable as if they had been written to-day. He wrote five comedies. Four of these are pleasant to scholars looking for a Ph.D. but the fifth one, *La Cortegiana*, still deserves the comment made on it when it came out. The Marquis of Mantua then called it: "the mirror of the modern court and of present day life." It may not be good theatre—and so critics of the drama insist—but it is surely good reading. The same could be said of the *pasquinades*, the *giudizzi* or mock almanacs, and to a lesser degree of *The Testament of the Elephant*, if it were not for the fact that they are so packed with contemporary allusions that unless you know something of the people of the period, much of them might go over your head.

But it is the *Ragionamenti* which are Aretino's great work. If they are not pornography, there is no such thing as pornography, for they are obsessed with

one fact and that is the sexual act at its very baldest, stripped even of such decorative illusions as Boccaccio, who was close to the ideal of knightly love, was still able to give to it. But they are not simply dirty writing. For if it be art to make human animals rise three-dimensioned from the printed page into actual and full-blooded being, these "dialogues" are certainly art.

What they amount to is well known, and what they are and how they should be valued is discussed elsewhere in this Encyclopedia. It is enough to say that they are the conversations of two prostitutes who frankly discuss all the aspects of their profession in a coarse age when the most cultivated persons—such as Marguerite of Navarre—spoke a language that would bring blushes even to a fairly hardened modern cheek. For that reason they are not for children, and they are also only to be recommended to such adults as have both steady nerves and level heads.

But within their own somewhat sordid limits they are utterly realistic and true. They have never been taken quite as seriously as Rabelais because crude realism has never had quite the same standing as crude comedy. This may be morally sound, for a laugh, after all, is cleansing. Yet they are part of "the record" and as such, therefore, cannot be ignored. For if man is but a little lower than the angels, so also—at least in some of his manifestations—is he but a little higher than the beasts. And this fact, Aretino most eloquently, if to some people—perhaps even to many people—deplorably, brings out.

Pierre Gauthiez, *L'Aretin*; Alessandro Luzio, *Pietro Aretino e Pasquino* (in "Nuova Antologia," vol. 112, pp. 679-708), *Pietro Aretino nei Primi Suoi Anni a Venezia*; Samuel Putnam, *Pietro Aretino, Poison Flower of the Renaissance* (in "The Works of Aretino," translated by Samuel Putnam); Vittorio Rossi, *Pasquinate di Pietro Aretino* ed. *Anonime per Il Conclave e l'Elezione di Adriano VI*; Edward Hutton, *Aretino, the First Journalist*; Francesco Berni, (attributed to), *Vita di Pietro Aretino*; Count Giammaria Mazzuchelli, *Vita di Pietro Aretino*; Pietro Aretino, *Lettere* (Paris, 1609), *Ragionamenti*

(Cosmopoli, 1660), *Commedie* (Milan), *Lettere scritte a Signor Pietro Aretino* (Venice, 1551).

T. C. C.

ASCETICISM, the theory and practice of bodily abstinence and mortification, usually for religious and moral purposes. The word is derived from the Greek (*ασκήω*), meaning "to practise," "to train," embodying a metaphor from the sport of wrestling in which the best trained were expected to win. As a moral ideal, asceticism had origin in a distinction between the sacred and the profane spheres of human activity, spheres regarded by ascetics as mutually exclusive. They held that the soul could flourish only at the expense of the body, the body at the expense of the soul. Primitive asceticism, however, took little account of such theorizing, concerned as it was with magic and ritual. In savage societies, asceticism was a thing that worked toward the concrete realization of goals important to the tribe in terms of survival.

Chief Forms.—Ascetic practice centers chiefly in fasting, denial of the sexual instinct, and subjection of the body to pain or discomfort through nakedness, vigil, avoidance of baths, of hair-cutting, of clean clothes, and by means of physical torture like flagellation, lying on beds of spikes, standing for long periods of time in icy water, and living in very bleak or else extremely confined quarters.

Sexual Asceticism in General.—The efficacy of sexual abstinence is a world-wide belief. It has been held in all ages and in all levels of human society, being variously regarded as of magical, religious, moral, or hygienic value. In addition to these, it has been put to psychological and artistic use. All forms appear to be co-existent at the present time.

Primitive Sexual Abstinence.—To the savage mind continence had all the potency of magic. By its observance, the forces of sympathetic magic could be brought to bear for the realization of primitive man's most important concerns—such as adequate food supply

and success in war. In many instances the restraint of sexual expression was for a brief time only, a time which ended with the accomplishment of some very definite purpose.

An example of continence in connection with food supply is furnished by the Pipiles of Central America. For four days before the seed was sown in the earth, they regularly kept apart from their wives in order that they might indulge their passions to the fullest at the time of actual planting because they thought the seed in the ground would take added fertility from their own reproductive fervor. The Indians of Nicaragua, on the other hand, put away their wives during the whole period from the sowing to the reaping of the maize with the idea that the reproductive vigor which they refused to expend would transfer itself to the crop.

Similarly, savages resorted to the supposed power of abstinence when on the war path, although their reasons for so doing are not as evident as they are in the case of vegetation rites. Sir James Frazer thinks the primitive warrior may have feared that contact with women would infect him, again through sympathetic magic, with feminine weakness and cowardice. Some tribes even extended the taboo on women over a considerable period after victory, probably in order to ward off the onslaught of the ghosts of the men they had slain in battle.

Continence was likewise common as a mourning observance, the importance of the dead usually determining the length of the period. Contact with sacred objects called for continence, as did participation in religious observances. Sexual intercourse is still forbidden to pilgrims to Mecca. During the actual performance of sacred rites, no matter what their duration, total abstinence was almost universally exacted. Such requirements yet persist in the primitive societies of the world.

More permanent continence also had its place among savage peoples, where it usually took the form of female vir-

ginity. War chiefs sometimes kept a virgin in their service as caretaker for their war implements. Her virginity supposedly infected them with a virtue that was communicable. If the caretaker lost her virginity, the arms were thrown out as tainted and as dangerous to the user. Permanent male chastity figured rarely, if at all, in primitive religious practice.

Chastity in the Religions of the East.

—The practice of male chastity became widely authoritative in Gainism and Buddhism. From being compulsory at the beginning and the end of life, it came gradually to usurp the whole of it, despite the conflicting idea that the orthodox devotee should do his part in continuing the race.

The vow of continence became the fifth of the major vows of the Buddhist religious. To break it was to face excommunication. Lesser offences were clearly defined. They included touching a woman's hand, her hair, or any part of her body and sitting with her in a secluded spot. Gaina scriptures were even more specific. They warned the celibate monk against the seductive wiles of woman by which she might contrive forbidden intimacy through such devices as sitting down by his side, wearing fine clothes in his presence, showing the lower parts of her body and also the armpit when raising her arms. Very strict chaperonage was prescribed whenever the monk found it necessary to deal personally with a woman.

Christian Celibacy.—Through Greek, Roman, and Hebrew channels the theory of religious chastity entered Christianity, where it found a fertile field. Having evolved away from the level of primitive magic toward a moral idealism buttressed by supernatural sanctions, sexual abstinence had become an ascetic doctrine. In Christianity, the Greek cult of asceticism, with its sharp distinction between things spiritual and things bodily, flowered anew.

Christian celibacy had a practical introduction through the widow, who was not expected to remarry too soon after

her bereavement and who, in the opinion of the apostle Paul, did better in never remarrying. Sworn widowhood led by easy stages to the order of deaconess, which in turn gave place to that of the nun, now the chief example of female religious celibacy.

The evolution of the widow affected the widower as well. Very early, he, too, could acquire added virtue by not taking a second wife. The priest, at first forbidden to remarry, was quite soon forbidden to marry at all, this prohibition being strengthened by the example of marriage and continence laws in the Jewish church. The doctrine of the celibacy of the clergy, now chiefly a Roman Catholic practice, thus originated in or about the 4th century.

Despite the moral evolution of the concept of chastity, it still retained vestiges of its source in primitive magic. Early church writings claimed many marvels. Starved lions lay down at the feet of Thecla who was preserved by her chastity. Her virtue, moreover, protected her from countless physical assaults. Saint Lucy, who refused to keep her marriage promise because she wished to become the bride of Christ was ordered to a house of prostitution by a wicked trial judge. But she steadfastly refused to go, and such was the power of her chastity that neither a thousand men nor teams of oxen could budge her. Even a nineteenth century historian records that Saint Teresa was once seen raised in an ecstasy of purity a considerable distance in the air.

At the present time, the Roman Catholic Church maintains the special grace of a celibate priesthood and encourages the monastic career for both men and women. The Church of England and the Protestant Episcopal Church in the United States also have monastic establishments, which require the triple vow of poverty, chastity, and obedience.

Lay Continence.—The greatest emphasis is placed upon the youthful unmarried, especially women, although definite attempts have been made to break down the so-called double stand-

ard of sexual morality in Western society. Social, as well as religious, thinkers maintain that pre-marital chastity is essential to the welfare of the family, just as they disapprove of all forms of prostitution. Apart from such general appeals as that to the integrity of the family or to economic necessity, complete sexual abstinence before and outside of marriage has come to have little support except from religion. Such negative sanctions as fear of pregnancy or venereal disease appear to dominate most non-religious propaganda for the continence of the unmarried.

Working against these sanctions is the widely prevalent idea that total sex abstinence (See ABSTINENCE) is bad for the health of the individual, particularly the man. Although a fully authoritative statement from medical, psychological, and social experts has never been obtained, various minorities in these fields have gone on record, claiming that complete continence is harmless physically and mentally. The question is confused by the rise of contraception to a very important practice, at least in the upper-classes of the Western nations. The injurious penalties of illegitimacy (See ILLEGITIMACY), likewise the mental wounds of public disgrace have been partially obviated, especially for the young. All these forces have tended to return the concept of chastity to a mediaeval category, where it was of great public but of little private value.

Continence for Special Reasons.—The athlete and the artist have always found use for sexual restraint. Continence is pursued for purposes nearly as specific as those of primitive magic. The athlete, seeking the maximum of nervous resource, quite as much from the psychological point of view as the physical, follows an ascetic régime which embraces food, drink, and tobacco, in addition to sex activity. And the writer, for example, is often advised by the expert to sublimate erotic energy into the stimulation of the imagination and the emotions. Psychology has not yet shown that there is no important relation be-

tween sexual and artistic expression. John Milton, more the athlete of God than of the Olympiad, more a priest of letters than a practitioner, deliberately dedicated his youth to ascetic discipline for the sake of his poetic vocation. He has had many predecessors and successors.

Summary.—Belief in the value of sexual asceticism has survived all accidents of time and circumstance. And, while it has tended to concentrate itself in the religious sphere, where it has a more or less idealistic nature, the most primitive attitudes are still represented in the savage societies of the world, quite as the most lofty and ecstatic self-denial persists among religious zealots. Science has furnished much explanation for ascetic enthusiasm but no substitute that has as yet been universally accepted.

L. Dugas, *L'absolu, forme pathologique et normale des sentiments* (1904); Sir James Frazer, *The Golden Bough* (1900); Oscar Hardman, *The Ideals of Asceticism* (1924); E. James, *Primitive Ritual and Belief* (1917); Felix Kirsch, *Training in Chastity* (1930); Robert Michels, *Amour et Chasteté* (1914); Elsie Parsons, *Religious Chastity* (1913); Joseph Swain, *The Hellenic Origins of Christian Asceticism* (1916).

W. M. H.

ASMODEUS, or ASHMEDAI, the Hebrew demon of jealousy and marital unhappiness, is first mentioned in the Book of Tobit, now in the Apocrypha. The Book of Tobit is a religious novelette, a variety of literature invented by the Jews; although declared canonical by Catholic Councils (at Carthage, 379, A.D., and at Trent, 1546), the Book of Tobit was never received into the Jewish canon. The time, place, and language of the original production are uncertain.

According to the Book of Tobit, the seven husbands of the beautiful Sara were slain by the jealous Asmodeus on their wedding-night, before they were able to consummate the marriage. Tobias feared he would be the next victim, but following the instructions of Raphael he burnt the heart and liver of a fish: "The which smell when the evil spirit had smelled, he fled to the utmost parts

of Egypt, and the angel bound him."

The Talmud states that this demon assaulted Bath-sheba, the mother of Solomon. According to the pseudoepigraphic Testament of Solomon, Asmodeus thus explained his functions to King Solomon: "I was born of angel's seed by a daughter of man . . . I am called Asmodeus among mortals, and my business is to plot against the newly wedded, so that they may not know one another. And I sever them utterly by many calamities; and I waste away the beauty of virgins and estrange their hearts . . . I transport men into fits of madness and desire when they have wives of their own, so that they leave them and go off by night and day to others that belong to other men; with the result that they commit sin and fall into murderous deeds."

Solomon compelled Asmodeus to help in the building of the Temple. Because of his evil propensities, Asmodeus was regarded as the male counterpart of the female demon of the Hebrews, Lilith. The legend has Iranian elements, and Asmodeus himself has been identified with the Persian demon, Aeshma-daeva.

The Apocrypha: Book of Tobit (chapters iii, vi, viii); *Testament of Solomon* (translation in Jewish Quarterly Review, xi); detailed account by Louis Ginzberg (*Jewish Encyclopedia*, ii, 217-20).

ASS, EROTIC SIGNIFICANCE OF THE. In classic antiquity, and especially with the Romans, the ass was elevated to the rank of a sexual symbol. Noted for the size of its organ, it was an emblem of sexual prowess, and lovers were accustomed to suspend an ass' head, together with a Bacchic vine-stalk, above their beds, either as a votive offering for amorous feats accomplished, or by way of bringing luck in gallant encounters to come.

On the other hand, the ass was an object of ridicule, and even of aversion, being looked upon as an ill-omen. The term *onos* in Greek denoted the ace at dice, or the lowest and least fortunate of possible throws (as contrasted with Venus, the best throw); and it was a harbinger of bad luck to meet an ass

on one's path. This combination of a jocular sexual admiration with a greater or less degree of loathing has to be taken into account, if we are to understand, not only the attitude of the ancients toward the animal, but the implications of the symbol as later transferred to the human or other rump.

With Priapus himself, the ass was not in good standing. It is true, the obscene and none too dignified divinity was fond of having an ass offered to him as a sacrifice; but that, in accordance with classic mythology, was owing to a grudge or two he bore the beast. There is the story of the ass of Silenus, who saved Cybele's honor by braying, thus frustrating Priapus' intentions and earning the phallic god's ill-will. Cybele, out of gratitude, hung a bell on the ass' ears, as a perpetual reminder of danger, and consecrated him to the service of her temple. But when the ass performed a similar service for the nymph Lotis, the latter was not so grateful, and she became an enemy.

Yet, in spite of this, the ass played a prominent part in the processions of Bacchus, and bore offerings to the temple of Vesta, the chaste. Possibly, the epigrammatists were right who remarked that, if Priapus did not like the ass, it was for the reason that he was jealous (a stress on the sexual prowess).

In any case, the ass was early used in the barbaric punishment of adulteresses, as at Cumae in the Campania. Here, the erring wife was stripped and exposed upon a rock; and then, after she had been duly mocked and insulted by the crowd, she would be placed upon an ass and paraded through the town to the accompaniment of hoots and jeers. After that, and for the rest of her life, she was *onothatis*, or "she who has mounted the ass."

According to some of the old commentators, the ass, in yet earlier times in Latium, had played a still more prominent part in the ceremony, the adulteress being forced to submit to intercourse with the animal.

However this may be, the parade on

the ass' back continued down the Middle Ages as an emblematic punishment for connubial infidelity. Long after actual intercourse with the beast, if it once existed, had been abandoned, the woman was placed in a sort of rude pillory, surmounted by an ass' head, where any male who wished might approach her. Socrates the Scholastic has left an account of this variety of punishment, which was in vogue through the fifth century of the Christian era, if not later.

On the whole, we may agree with Lacroix, when he states that "The ass obviously stood for lust in its most brutal form." (See Paul Lacroix, *History of Prostitution*, Part I., Chapter xv.)

S. P.

ASTARTE (The same form occurs in Greek, Hebrew and Phoenician). A goddess of the Syrians and Phoenicians, who has been identified sometimes as Venus, and sometimes as Diana. In Lucianus, she is apparently equivalent to the Greco-Roman love deity, and Cicero (*De natura deorum*, iii, 23) speaks of her as the fourth Venus. This divinity's rites were imported from Phoenicia into Syria, and were closely associated with prostitution.

She was worshipped at Tyre, Sidon, and elsewhere, and had a number of celebrated shrines, among them, one at Heliopolis and another in the Mt. Lebanon region. On the island of Cyprus, also, there were a score of temples to Astarte, including the well-known ones at Paphus and Amathus, the former of the two being famous as far back as Homer's time, as there is mention of it in the *Odyssey* (viii, 363).

ASTHMA (Greek, panting) is a chronic allergic condition, characterized by paroxysmal dyspnea and wheezing noises in the prolonged and difficult expirations; the sense of suffocating constriction is due to the spasmodic contraction of the bronchioles. A graphic account of the asthma fit was given by one of its most eminent victims, Sir John Floyer (*Treatise of the Asthma*, 1698). The clinical picture is alarming, yet asthmatics pant on to old age; Oliver Wendell Holmes spoke of his own mild asthma as "that slight ailment that promotes longevity." In modern language,

asthma may be defined as an anaphylactic manifestation in sensitized persons.

Cases have been reported in which the act of coitus produces an attack of asthma. Both sexes are affected, and the condition was attributed to sensitiveness to spermatozoa. This opinion is being displaced by the belief that the effect of heat and effort is responsible. *Sexual asthma*: reflex asthma from venereal disease or excessive coitus.

W. W. Duke, *Heat and Effort Sensitiveness*, Archives of Internal Medicine, 1930, 206-40.

ASTYPHIA, or **ASTYSIA**. A defective erectile power of the penis; sexual impotence.

BACCHANAL. Originally, a place devoted to Bacchus, the god of wine, or one where his festivals were held.

Plautus, *Aularia*, i, 3 and 8; Livy, xxxix, 18. In the plural form, **BACCHANALIA**, the word was applied to the feast itself and the accompanying orgies.

BACCHANALIA. The adjective, bacchanalian, has passed into the language, as referring to a drunken revelry, orgy, etc. Yet, the original bacchanalian festival was rustic and religious in character, staged in honor of the god of the vineyards and of the earth's fertility.

The annual Dionysia, or Athenian Bacchic feasts, originally looked upon as three in number, are now believed to have been four. The first, or Feast of the Fields, was held in Poseidon (December), when the vintage was just over. Old tragedies and comedies were put on at this time. The second feast, known as the Lenaea (Greek: *lenos*, winepress) was held in the suburb, Limnae, where a place for that purpose, known as the Lenaeum, stood, in the month of Gamelion (January), when the wine was newly made and the presses had been cleaned. From this feast, the month came to be called Lenaeum, a name retained by the Asiatic Ionians. At this festival, new tragedies and comedies were given, and there was a prize consisting of the rich must of the new vintage. The third feast was the Anthesteria, held in Anthes-

terion (February). The first day of the rite was known as Pithoegia, or the Cask-Opening. It was then that the casks of the old vintage were first tapped, accompanied by a public picnic. It would seem that dramatic performances were lacking on this occasion.

The fourth feast, generically known as the Dionysia, was the most important of all. For it, strangers flocked to Athens from all parts of Greece, and there were imposing exhibitions of various sorts, most of the playwrights' fresh output being reserved for the event. It was from this that the Bacchanalia took on their definite character. There is no doubt that there was much drunkenness and debauchery, as there was to a greater or less extent in connection with more primitive forms of the festival—as, indeed, there is likely to be, among savage or civilized peoples, when the wine gets in its work.

At Rome, the Bacchanalia—to be distinguished from the Liberalia, or feast of the old Italian deity, Liber, also a god of the vine—were observed with an extreme licentiousness and tumult. As a result, in the year 186 B.C., they were prohibited by a decree of the Senate, the *Senatusconsultum de Bacchanalibus*, the text of which has come down to us. (See Livy, xxxix, 9-18 and 41; Cicero, *De legibus*, ii, 15; Tacitus, *Historia*, ii, 68.) From this character of the old festival came Juvenal's expression, *Bacchanalia vivere*, i.e., to live riotously and wantonly, in the manner of the Bacchantes, or participants in the Bacchanalia.

BACCHANT (French form: **BACCHANTE**). One of the frenzied female companions and worshipers of Bacchus, the god of wine, in the Bacchanalia, or orgies which accompanied his festival. They are traditionally represented in the company of the Silenus and the other Satyrs, as well as that of the god. The Bacchant usually had an ivy wreath on her head, a fawn-skin over her left shoulder, and an ivy-twined staff in her hand, while her hair flew wildly about. She was, and has been, a favorite subject with the ancient and the modern romantic painter. (*Bacchas istas cum Musis Metelli comparas*, writes Cicero, *Epistolae ad familiares*, vii, 23.) The

Bacchant is to be compared to the Greek Maenad and the θύαξ. The Bacchantes were in the habit of carrying their frenzy to the point where they dropped unconscious. Apparently, their orgies were not free of blood; for Statius speaks of the blood spilt by them, and of their *bella* or "warfare" (*Thebais*, i, 328, and xii, 791).

BACCHUS (Greek, **DIONYSUS**). From early times, Bacchus has been the companion of Venus, and wine the traditional accompaniment and spur to sexual passion. As the old proverb, quoted by Rabelais, has it, *Sine Baccho et Cerere, friget Venus* ("Without Bacchus and Ceres, Venus grows cold").

But Bacchus, to the ancients—and this is a measure of the distance between Greece and Rome and a recent prohibition America—was something more than a mere rowdy tippler; he was a good deal more. The Greeks had a habit of taking in the whole of things; and accordingly, to them, among whom his myth grew up, Dionysus stood not alone for the intoxicating properties of wine, but also for its beneficent and socializing effects, capable of being caught up and interwoven in a great civilization, such as that of the French to-day, or of the Latin peoples generally. In this aspect, Bacchus becomes for the Greeks the dispenser of laws and a force for peace. He becomes, at the same time, a symbol of a high and ennobling enthusiasm. We are to keep this broader, and loftier, conception in mind in studying his legend.

That legend is of comparatively late development, as has been traced in Creuzer's *Dionysos*. The name, Dionysus, does not often occur in Homer; the other appellation, Bacchus, is first found in Herodotus. The worship of the god, none the less, in manifold forms, goes back to a primitive day. It is as the planter and guardian of the vine that he is thus early honored, and as typifying the generative and productive principle in nature. (See Müller's *Archäologie der Kunst*.) It is as Bacchus, the Inspirer, that he evolves into the patron of dramatic poetry and theatric art.

The son of Zeus and a Theban woman, Semele, Bacchus was the *bis genitus*, the twice born; for Semele died before his birth, and Jupiter thereupon carried his progeny in his

hip until the young demi-god was mature. (See Ovid's *Metamorphoses*, iii, 310 and iv, 12, and the *Tristia*, v, 3, 26.) The story of his life adventures may be found in Bulfinch's *The Age of Fable* or any popular manual of mythology. Having discovered the vine and its juice, Bacchus was struck with madness by Juno and became a wanderer over the earth. It was, significantly, the earth-goddess, Rhea, who cured him and taught him her rites. This points to that higher meaning of the legend which has been stressed above. The story of the Theban Pentheus and the introduction of the Bacchic rites into Greece is well known.

At Rome, it was as Bacchus, rather than Dionysus, that the wine-god was worshiped. The form, Dionysus, it is to be noticed, does not occur in the Augustan poets; although it will be found in Cicero's *De natura deorum* (iii, 33, sq., and elsewhere) and as far back as Plautus' *Stichus* (v, 2, 13). And it is, chiefly, as Bacchus that the presiding deity of the vineyards has come down to us.

The Romans, however, had other names for him. They called him *Liber*, or the Care-Dispeller. As a source of the divine afflatus, Bacchus became the god of poets; and it was for this reason that the latter wore crowns of ivy which had been consecrated to him. Ovid, in his *Tristia* (v, 3, 15), speaks of the poet's *Bacchica verba*, or Bacchic words; for Bacchus had a predilection for good poets—the good ones, that is, were supposed to be particularly inspired by him.

Liber was himself an old Italian deity, who had to do with planting and fruit-bearing. It was in later times that his name was transferred to the Greek divinity. (See Cicero, *De natura deorum*, ii, 24; Varro, *De re rustica*, i, 1, 5; etc.) Liber had his festival, the *Liberalia*, corresponding to the Greek Dionysiac rite and celebrated on March 17, or the day that youths put on the *toga virilis*. It is anthropologically of interest to compare the worship of the Italian Liber with the rites paid to Dionysus in Thrace, Macedonia, upon Mt. Edon, and elsewhere.

As the god of nature, Bacchus was anciently represented by a phallic Herma. In classical times, he was depicted as a beautiful youth, crowned with leaves or ivy, and sometimes with small horns upon his brow; this is the *Bacchus corymbifer* of Ovid (*Fasti*, i, 393). He had long, curly locks falling down over his shoulders—*depeus crinibus*, as Ovid puts it (*Fasti*, iii, 465; *Metamorphoses*, iii, 421). With the exception of a fawn's skin cast negligently about him, he was usually quite naked, as to body, with high buskins and cothurni on legs and feet. In his hand,

he carried the thyrsus, as did his customary attendants, Silenus and the Bacchæ.

BARRUCCI, GIULIA. Courtesan under the Second Empire. Self-styled *la grande Puttana del Mondo* (the greatest strumpet in the world). "She took great pride in being the joy and desire of men, and like the priestesses of Mitylene, she willingly would have given to all the women of her time lessons in love, so much was she enamored of the science she practised so well" (Marie Colombier). All princes passed through her boudoir.

BAR SINISTER, in heraldry a bar, bend or wavy line on the paternal arms or shield indicating illegitimacy. Especially in the 14th century bastards of high rank are said thus to have differed the paternal armorial symbols. The bar sinister is known also as bastard bar, baston, and baton. Bend sinister is considered more correct, since the heraldic bar is horizontal, and therefore can be neither dexter nor sinister. The "bar sinister" has been popularized by novelists, and not by historians of heraldry.

Marguerite d'Angoulême (*Heptameron*, first printed 1558, novel xxi): "Now there was at Court a young gentleman who carried on an exceedingly noble coat the bar sinister."

BESANT, ANNIE (1849-1933). Reformer, Freethought author, lecturer and editor, birth controller, Fabian Socialist, Theosophist and Indian Nationalist by turns, Annie Besant lived in a vortex of social agitation and strife; and in her life are dramatically epitomized many of the social changes and movements of the past half century. She was hardly an original thinker; but that she was an independent one even her most contemporary enemies—of whom she developed many because she invariably took an unpopular stand—would be the first to admit.

Her volatile nature, alert mind, powers of public persuasion and leadership, together with certain life experiences, reinforcing natural proclivities, led her to take up the causes of the oppressed

and down-trodden everywhere. She was always seeking programs for alleviating the sufferings of the lower classes; nor was personal danger an impediment, once she had determined upon her path. She attempted to organize the sweated women's needle trades, opposed war, capital punishment, supported woman suffrage and the emancipation of women economically and sexually. She moved constantly from one firing line to another. If the cause was to serve as an emotional outlet for sympathy, the choice was never made without deliberation and intellectual inquiry.

Annie Besant's life is of interest to the readers of this work chiefly for her able and daring legal defense of the right to publish information on birth control in a day (1877) when the very thought of it scandalized. Mrs. Besant was the daughter of a physician (though he never practised). She entered marriage ignorant of sex, and this shocked her. It was probably, however, her knowledge of the degradation of overburdened, poor mothers, her association with Charles Bradlaugh (q.v.), together with the circumstances leading up to the prosecution of the Knowlton pamphlet, especially the fact that the tract had been published by a well-known Freethought publisher (see report on CHARLES BRADLAUGH for an account of these circumstances) that led her to insist upon standing at Bradlaugh's side during the legal fight. Her opening speech for the defense, comprising about forty thousand words, was an able one. Though acquitted of a corrupt motive, the defendants were found guilty. But upon appeal the verdict was quashed, so that in the end the defendants were vindicated.

A Malthusian League was then formed—there had been a feeble, short-lived organization in the 'sixties—and Mrs. Besant became its first secretary, wrote pamphlets and assisted in the propaganda. Since she felt that the *Fruits of Philosophy* was now out of date, and since the notoriety of the

prosecution, with its accompanying publicity, created an enlarged demand for cheap contraceptive tracts, she wrote and published *The Law of Population*, of which at least 175,000 copies were sold before it was withdrawn (1891) shortly after Mrs. Besant became a Theosophist (1889). In 1891 she withdrew from the National Secular Society. This was the final blow to Bradlaugh, her joining the Fabians in 1884—Bradlaugh was a strong individualist—having been the first.

At various phases of her stormy career Mrs. Besant edited *Our Corner* (where she early recognized the ability of G. B. Shaw, when no one else would publish his early novels), the *National Reformer*, the *Link*, *Lucifer*, etc.

The Law of Population: Its Consequences and Its Bearing upon Human Conduct and Morals was first published in London in January, 1879 (possibly late in 1878). Chapter I dealt with "The Law of Population," Chapter II with "Its Consequences," Chapter III with "Its Bearing upon Human Conduct and Morals," while the fourth was entitled "Objections Considered."

It is interesting to trace the development of Mrs. Besant's thought on contraceptive technique in the various editions of the *Law*. This subject, treated *in extenso* in my *Medical History of Contraception* (in press) is only briefly dealt with here. The first issue of the *Law* mentions the safe period (not certain), withdrawal, "syringing" with a solution of sulphate of zinc or alum (see KNOWLTON), the baudruche (condom), cotton tampon and the sponge (preferred). Prolonged nursing and untherapeutic abortion were condemned. In later editions there was undue emphasis on the importance of using a reverse current syringe. Attention was likewise given in later issues to "soluble pessaries" (suppositories) and the "pessary," that is, the cervical rubber cap, not the Mensinga vaginal diaphragm, which seems not to have been known in England at this time. By 1887 the cervical rubber cap—of



which she may have learned from Dr. Henry A. Allbutt—and the suppository had taken coördinate rank in Mrs. Besant's mind with the sponge. Douching with quinine solutions was also mentioned, as was an artificial sponge.

If Mrs. Besant's discussion of medical technique now seems a little naïve we ought to remember that much has been learned by subsequent experience. All told, it was decent, informed, well-motivated, and by no means uncritical. The same is true of her social and economic case for birth control. If she argued for too much, we must realize the unyielding, scandalized and intemperate nature of most of the opposition.

First published in 1879, the *Law* was in its seventieth thousand by 1882; in its one hundred tenth by 1887. Within twelve years of publication (i.e., by 1891), 175,000 had been sold in England at sixpence. It was reprinted in America and in Australia, where an unsuccessful attempt was made to prosecute it. It was translated into German, Dutch, Italian, French and doubtless other languages; and gave impetus to the publication of similar works. In

1891, as indicated above, it was withdrawn when Mrs. Besant turned her back on "rationalism" and became mystical. But shortly before her death, at the fiftieth anniversary dinner of the Malthusian League held in London, I heard her avow her old conviction of the importance of birth control in a distracted and socially-chaotic world.

Geoffrey West, *Mrs. Annie Besant*, 1927. Gertrude Marvin Williams, *The Passionate Pilgrim. A Life of Annie Besant*, 1931. *Annie Besant: An Autobiography*, 1893. *Autobiographical Sketches*, 1885. H. B. Bonner, *Charles Bradlaugh*, 1894.

N. E. H.

BESTIALITY. Sexual relations, of one sort or another, between a human being, male or female, and one of the lower animals. Latin: *bestialis* (post-classical and rare), pertaining to a beast, *bestia*.

(Of all the human sexual aberrations, the one probably which has inspired the deepest horror is intercourse between man and beast. In the minds, especially, of the religiously inclined, it has been looked upon as something beyond a mere perversion, something unspeakably impious and blasphemous, closely akin to atheism (as the mediaeval intelligence saw it) and savoring of that commerce with the powers of darkness for which witches and sorcerers stood. This will go to explain the terrible severity of the ecclesiastical and the civil law with regard to it, from the time of Moses down. In the Middle Ages, it often meant the burning alive of the guilty man or woman; and the horror felt for the act was further reflected in the concomitant slaying of the animal accomplice.)

The offense is a very old one, indeed, being widely depicted in ancient oriental and primitive art. It seems likely that the rites of Baal, among the Chaldeans and the Midianites, were marked by bestiality; and the Hebrews had made the acquaintance of it among the Egyptians and the peoples surrounding them in their own land. Moses clearly views it as a foreign importation; for in *Leviticus* (xx, 23) after inveighing

against this and other offenses, such as sodomy and adultery, which were to carry with them the death penalty, he observes:

"And ye shall not walk in the manner of the nation, which I cast out before you: for they committed all these things, and therefore I abhorred them."

Toward bestiality, as toward sodomy and adultery, the great Hebraic law-giver, who is animated always by a sense of the social welfare and of property rights, is inexorable: "And if a man lie with a beast, he shall surely be put to death: and ye shall slay the beast."

"And if a woman approach unto any beast, and lie down thereto, thou shalt kill the woman, and the beast: they shall surely be put to death; their blood shall be upon them." (*Leviticus*, xx, 15-16.)

"Whoever lieth with a beast shall surely be put to death." (*Exodus*, xxii, 19.)

The provision for the slaying of the beast, antecedent of the mediaeval custom, is to be noted.

But in spite of laws, civil or religious, bestiality continued to exist; and we find it assuming a flagrant form in the last degenerate days of the Roman Empire, the age of Petronius Arbiter. Here, we even have nicknames for the libertines, based upon the kind of animal they preferred. The *anserarii*, for example, were fond of geese; the *caprarii* gave their preference to nanny-goats; the *beluarii* fancied dogs and monkeys; etc.¹ Bestiality, in the form of the Priapic ass, would appear to have figured also in the rites of the Bona Dea at Rome, that goddess of chastity whose temple men were forbidden to enter, but which in later days became the scene of riotous orgies, such as Juvenal has described in his Sixth Satire, aimed at the decadence of feminine manners.² Matrons, known as the *Maenades Priapi*, or "Maenads of Priapus," would there invoke the phallic god; and according to the poet, the devotee, "if men are lacking, does not hesitate to turn up her rump to a vigorous ass."³

¹ Lacroix, *History of Prostitution*, New York, 1932, Part I., Chapter xvi.

² See also: Juvenal, 2, 84ff; in the Sixth Satire, see 314ff; 335ff.

³ "Hic si

*Quaeritur et desunt homines, mora nulla peripsam
Quominus imposito clunem submittat asello."*

The ass became a sexual symbol. At Cumae, women taken in adultery were publicly promenade upon its back, and the one so punished remained for the rest of her life "she who has ridden the ass"—a custom that was to spread over Europe and continue down through the Middle Ages. According to certain commentators,⁴ the punishment in ancient Latium consisted of something more than a ride on the animal's back, the adulteress being forced to submit publicly to intercourse with the beast. When the actual animal was done away with, in the chastisement of the erring wife, its carved head remained above the sort of primitive pillory in which the culprit was exposed, to public scorn and to any male who chose to make use of her. In all this may be seen a distinct figuration of a bestiality that was not unknown in ordinary life. (See ASS AS A SEXUAL SYMBOL.)

As for the goose, it was "Priapus' delight," as Petronius termed it; and strange as it may seem, this animal has been widely employed for erotic purposes, the Chinese, according to accounts, taking a special pleasure in it, while Kraft-Ebing, in his *Psychopathia Sexualis*, relates a modern instance, that of a youth who, engaged in intercourse with one of these animals, in the garden, was surprised to look up and find the neighbors watching him, and who thereupon inquired: "What's the matter? Is there anything wrong with the goose?"

With the ancients, the goose was vaguely associated⁵ with the swan into which Jove had transformed himself, in seducing Leda, at Amyclae, in aconia.⁶ Leda and her swan have provided a theme for innumerable painters and sculptors; and the form of intercourse which the swan, in this connection, has come to represent is cunnilingus. It was in this manner that Procopius' Theodora, in the *Secret History*, made use of her geese, the animals being enticed with grains of barley scattered over her private parts.

It was, however, left for the Chinese to introduce into this particular form of bestiality the utmost refinement of cruelty. In his *The Sexual Relations of Mankind* (Part I., Chapter V.),⁷ Paolo Mantegazza writes:

"The Chinese are famous for their amorous affairs with geese, the necks of which they are in the habit of cruelly wringing off at the moment of ejaculation, in order that they may get the pleasurable benefit of the anal sphincter's last spasms in the victim."

Other animals which have been made use of as objects of lust are: sheep; hens; mares; sows; etc. The Petronian *caprarii* were not the

⁴ Lacroix, *ibid.*, Part I., Chapter XV.

⁵ Cf. Virgil's *Ciris*, 488, where *anser* (goose) is used for swan.

⁶ Ovid, *Heroides*, 17, 55; *Metamorphoses*, 6, 109; etc.

⁷ *Gli amori degli uomini*, nuova edizione, Florence, 1930, p. 100. (Putnam translation).

only fanciers of goats; the custom still exists in the European countryside.

"At Rimini," says Mantegazza,⁸ "more than one young Apennine shepherd, suffering from nervous dyspepsia, confessed to me having abused she-goats in an extraordinary manner. It appears that they are also very fond of sows!"

If man upon occasion has exhibited an attraction for the nanny-goat, woman in turn has been known to submit to the male of the species. This was in the nature of a religious rite at Mendes in Egypt, according to Plutarch.⁹

In connection with the early Christian heretical sects, bestiality, along with sodomy and other sexual excesses, undoubtedly flourished at times. It has been spoken of, and denied, à propos of the Nicolaites. (See the *Second Epistle* of St. Peter, which is believed to have reference to this heresy.) In any event, we are sure that the vice was fairly common in the medieval period; the *Penitentials* of the Church would be enough to tell us that. *Cum jumento, cum quadrupede, cum animalibus*—"with a beast of burden, with a quadruped, with animals," we read in the Roman Penitential; *cum jumento, cum pecude*—"with a beast of burden or with cattle," in the Penitential of Angers; *cum pecoribus*—"with cattle," in other manuals. We also find the subject discussed in canonical letters; as witness the following, from the *Capitulary of Baluze*:¹⁰

"The third question had to do with one who had had unnatural relations with a female dog, and the fourth, with one who had frequently fornicated with cows. Whosoever shall come together with a beast of burden shall be put to death. And the woman who shall lie down with any beast of burden whatsoever shall be put to death along with the beast."¹¹

Bestiality was regarded by the Church as a remnant of a depraved

⁸ *Ibid.*, Italian edition, pp. 100-1.

⁹ Cf. Herodotus, 2, 46.

¹⁰ *Capit. de Baluze*, t. H, append., col. 1378.

¹¹ "Tertia quaestio de eo fuit, qui cani feminae irrationabiliter se miscuit, et quarta de illo, qui cum vaccis saepius fornicatus est? Qui cum jumento vel pecore coierit, morte moriatur. Mulier quae succuberit cuilibet jumento, simul interficiatur cum eo."

paganism, and bishops and priests were urged to combat it. The civil law, likewise, took stern cognizance of the offense, and parliamentary records are another confirmation of the frequency with which the perversion occurred. Dogs, she-goats, cows, pigs and geese were burned with their human seducers. Within the jurisdiction of the Court of Rome, it is true, the culprit might get off with a fine;¹² but in France, the death-penalty was the rule. A seventeenth-century jurist, Claude Lebrun de la Rochette, explains why it is that animals as well as humans were so punished.¹³

"These animals are not punished by reason of any fault of their own, but for having been the instruments of so execrable a crime, as a result of which, a reason-endowed being is deprived of his life; they are looked upon, thereafter, as something unfit to meet the human gaze, after so signal a piece of mischief; the animal, too, would serve as a constant reminder of the act, every memory and trace of which must be suppressed in so far as possible. It is for this reason that the sovereign Court commonly decrees that the records of these cases be burned along with the delinquents."¹⁴

There was, in addition, the fear that, the Devil having a hand in the affair, if such copulations were permitted to go on, the world would eventually become populated with monsters.

Numerous examples of such executions might be cited. There was Guyot

¹² According to Mantegazza (*ibid.*; Italian edition, p. 101), the fine was one of 90 tornesi, 12 ducats, 6 carlini.

¹³ *Le procès civil et criminel*, Rouen, 1647.

¹⁴ "*Ces animaux ne sont pas punis pour leur faute, mais pour avoir été instrumens d'un si exécrable malheur, pour raison de quoy la vie est ostée à la personne raisonnable: estant chose indigne du respect des hommes, après une si signalée meschanc et parce que l'animal iroit toujours rafraichissant la mémoire de l'acte, qu'il faut supprimer et abolir le plus qu'il est possible, c'est pourquoy le plus souvent les Cours souveraines ordonnent que les procès de ses délinquans soient bruslez avec eux afin d'en estaindre du tout la mémoire.*"

Vuide, who was hanged and burned on the 26th of May, 1546, for having had relations with a cow. In this case, the animal was burned before the man was. In the year 1465, Gillet Soullart was burned alive with a sow. Jean de la Soille was burned January 5, 1556, for cohabitation with a she-ass, which was slain before being cast upon the pyre. At Toulouse a woman was burned for having had intercourse with a dog. Etc. These cases and many others will be found in the old legal and ecclesiastical archives.

The tendency to associate bestiality with an atheistic impiety and blasphemy has been mentioned; and it is accordingly not strange, if it was one of the attributes of sorcerers and witches and one of the features of the traditional "sabbath." Upon such occasions, as the demonologists describe them, Satan was in the habit of appearing to his worshipers in the form of a goat, a dog, an ass, a bull, a fox, or some similar animal—cats, blackbirds, etc., also figured in the ceremonies—and the sabbath participants would be called upon to kiss the shameful parts of the beast in question, since it was really upon their master, the Devil, that they were bestowing the caress.¹⁵ According to Bodin (*Démonomanie*), the Devil sometimes assumed the form of a dog, to seduce nuns:

"There are times when the bestial inclinations of certain women convey the impression of the presence of a devil. Something of this sort happened in the year 1566, in the diocese of Cologne. There was found in a convent a dog which was said to be a demon, and which lifted the robes of the religious to abuse them. This was not a demon in my opinion, but a natural dog. There was found at Toulouse a woman who had committed an offense of this sort, and

¹⁵ See: *Les controverses et recherches magiques de Martin Delrio, etc.*, traduit et abrégé du latin, par André du Chesne Tourangeau, Paris, 1611. Also: *Deux livres de la hayne de Sathan et malins esprits contre l'homme et de l'homme contre eux*, par P. P. Crespet, prieur des Célestins de Paris, 1590, p. 379.

the dog, in the presence of all, attempted to force her. She confessed the truth and was burned."

From which it may be seen, there are limits even to a demonographer's credulity. The same chronicler gives another incident; which he is rather inclined to attribute to the Evil One: "It happened at the monastery of Mount Hesse, in Germany, where the religious were demoniacal; and there one might have seen, upon their beds, dogs immodestly awaiting those who were suspected of such offenses, and of having committed that sin which is called the silent sin."¹⁶

The serpent, a phallic symbol par excellence,¹⁷ mingled with the rites of sorcery, with occasional intercourse of the animal with humans. A case in point here is that of the famous Sibyl of Norcia, a mediaeval queen and preceptress of magic. The school she kept was a perilous one. It was at his own risk that the would-be neophyte visited the Sibyl's cavern; and the ordeal he had to face has been thus described by Bayle:¹⁸ "The Sibyl and all those who inhabit her realm take each night the figure of a serpent, and it is necessary for all those who desire to enter the cavern to have relations with one of these serpents."

The same statement is to be found in Leandro Alberti's *Descritti di tutta Italia*: "At night, the males as well as females become frightful serpents, and the sibyls as well, and all who desire to enter there must first take their lascivious pleasure with the said loathsome serpents."¹⁹

All this indicates a deep imbedding of bestiality in the popular consciousness, especially in the Middle Ages,

¹⁶ *Démonomanie des sorciers*, Book III., Chapter VI.

¹⁷ See C. G. Jung, *Psychology of the Unconscious*, passim.

¹⁸ *Réponses aux questions d'un provincial*, Ch. 58.

¹⁹ "La notte, tanto i maschi quanto le femine, diventano spaventose serpi, insieme con le sibille, e che tutti quelli che desiderano entrarci, gli bisogna primieramente pigliare lascivi piaceri con le dette stomacose serpi."

when the sense of defilement was heightened by the darkly brooding Christian conscience—a factor that was lacking in pagan antiquity.²⁰ In early Puritan New England, there was a similar sense of sin, along with a belief in demons and witchcraft; and cases of bestiality are not infrequent in the annals of those states. In the state of Connecticut, the offense was punishable by death.

With an increased dissemination of scientific and sexual knowledge and a decided decrease of religious superstition in modern times, a good deal less is heard of bestiality. It is not extinct, medical evidence will indicate; but, for one reason or another, it does not show its head so often, and it is much more rarely that it breaks into court annals. Now that the mediaeval vapors of the mind have been blown away, it is looked upon as one of a considerable number of sexual aberrations, and as such, is material for the sexual psychiatrist.

There is a semi-jocular tradition to the effect that the lonely western rancher or cowboy in the United States is sometimes addicted to intercourse with sheep. This, indeed, has long since passed into a barroom jest, having to do with the ranch-hand who is embarrassed by the ewe's following him about; but there would seem to be no adducible basis for the thing in fact. Sheep, as we have seen, like goats, have been employed for such a purpose from remote ages; and in Peru, there was formerly a law prohibiting bachelors from keeping female alpacas in their homes.²¹ There was current in the same country a belief to the effect that syphilis was a disease peculiar to the alpaca, which that animal had passed on to man.²²

²⁰ We are not to mistake the mere phallic image, as often in the case of the serpent, for a necessary indication of the actual presence of bestiality. Old carvings are sometimes found with a serpent twined about the human body, the human penis in its mouth. This, it is likely, is purely emblematic.

²¹ Mantegazza (*ibid.*, Italian edition, p. 101) gives this on the authority of David Forbes.

²² In Hungary, studies have been made of the relation of human syphilis to sexual disease in mares.

In the days of the old "red light" districts in America, bestiality was not infrequently commercialized as a spectacle, in houses of prostitution, where, by paying the price, one might see an inmate in the act of intercourse with a shetland pony or a dog.

BIRTH CONTROL, HISTORY OF.

Birth control as a social *practice* reaches so far back into the dim beginnings of group life that it is impossible to locate its obscure origin even within the range of many centuries. Following the reasoning commonly adopted by social anthropologists, we may infer that if we find a social practice present in the group life of several contemporary primitive societies, a corresponding practice was probably in existence

among our ancestors long before the dawn of written history.

Accordingly, it is not fantastic to say that the practice of birth control is several hundred thousand years old, perhaps nearly a million years old. By contrast, the *social movement* for birth control is hardly more than a century old, dating as it does from the propaganda led by Francis Place (1771-1854) and Richard Carlile (1790-1843) in England in the decade of the 1820's.

It is important to realize, too, that the medical history of contraception is much older than the economic phases of its history. The first *written* medical prescription for contraception still extant in writing and of any importance so far as its contents are concerned is a passage in the Kahun papyrus dating



EARLIEST KNOWN CONTRACEPTIVE PRESCRIPTION EXTANT IN WRITING, Kahun Papyrus, 1850 B.C.

from 1850 B.C. This mentioned the use of a suppository employing the tips of acacia to be used intra-vaginally. Recent chemical analysis shows that acacia breaks down under fermentation into lactic acid, a spermicidal agent commonly employed in our time for smearing rubber pessaries or in contraceptive jellies.

Before considering the early medical accounts it is desirable to outline the situation among primitive peoples. It has never been sufficiently understood that, while the most important population checks in primitive society were, besides the death-producing checks, the preventive checks of abortion, infanticide, taboos on intercourse, killing aged and the like, the prevention of conception also played a slight rôle, if only an extremely modest one. A very thorough survey of the anthropological literature on the various tribes of all the chief continents, a study I have recently undertaken, conclusively shows that many primitive peoples not only *desired* to prevent conception, but actually developed, in addition to numerous magical rites, more or less workable methods of prevention.

Probably these were hit upon by a process of trial and error, since it is extremely dubious whether many primitive peoples have understood the connection between sexual relations and a birth nine months later. The extent of knowledge of the physiology of conception held by primitive peoples is still a matter of controversy among anthropologists. The most tenable conclusion seems to be that ignorance was extremely widespread; and, when we find contraceptive practices appearing, they are almost exclusively a consequence of the trial and error process.

Next to the ceremonial abstinence from sexual connection, *coitus interruptus* is probably most frequently employed, though a sort of female condom is reported in use among a primitive tribe in northern South America. One end of a vegetable pod, not unlike our milkweed pod, is snipped off, is inserted into the vagina and receives the phallus. This is the most ingenious device recorded in all anthropological literature.

It ought to be clearly understood that wherever we find primitives employing contraceptive techniques, such use is the result, in virtually all instances, of an unconscious rather than conscious population policy. Not a few writers have erroneously intimated that the popula-

tion policies of the primitives were consciously held. Such a view not only presupposes a rather generally widespread and impossibly advanced knowledge of the physiology of conception, but modern attitudes of respect and consideration for the personality of women in sexual relations, particularly a desire to protect them from an excessive number of pregnancies. Neither of these conditions is fulfilled by the facts. It is true that primitive women commonly possessed the right to abort themselves or even to expose their infants; but impregnation was not generally and effectively prevented.

We know from ancient Chinese texts that, long before the dawn of the Christian era in the West, there was a desire, more or less embryonic, in China for the control of conception. However, it never made much progress, owing largely to the prevalence of ancestor worship and the doctrine of filial piety. What contraceptive knowledge existed was largely magical or ineffective.

Among the early Sanskrit writers about a score of prescriptions, dating from the first to the sixteenth centuries, have come down to us, mainly in erotic works. These again are chiefly curiosities—of service in furnishing part of the evidence for one of the chief generalizations developed in this field in recent years: that virtually every important people, in every part of the globe, has *desired* from time immemorial to control conception and prevent pregnancy waste. Only since the dawn of modern times, however, and since the increasing rationalization of social attitudes in the West dating from recent centuries, has real progress been made in the democratized diffusion of reliable, harmless, medically-intelligent instruction.

Certain ancient Egyptian physicians, whose names are unknown, made modest additions to our knowledge of contraception; but it remained for the Greek and Roman physicians, especially the former, to take the first important forward step. During the Middle Ages

this knowledge was fortunately preserved by the great Islamic medical encyclopedists, more especially certain Arabians, Persians and Jews. The Greek and Islamic writers had an emancipated, more or less modern attitude toward sex; and the approach was rational in no small measure. It remained for Christianity to confuse the problem with morals, and to set back medical advance by several centuries. It was not, indeed, until the publication of Charles Knowlton's *Fruits of Philosophy* (New York, 1832; 2nd ed. Boston, 1833) that the medical profession was set again on the track of rationality after the Islamic physicians had preserved the ennoblingly rational outlook and learning of Soranos of the second century and Aëtios of the sixth.

Soranos and Aëtios were undoubtedly the two leading figures in contraceptive medicine in Greek antiquity. The former, the more original of the two, produced in his *Gynecology* the most complete, rational and scientific discourse on contraceptive technique down to Knowlton—a spread of seventeen centuries. The quality of Aëtios' account is also high; but he built largely upon Soranos. Both had been anticipated by Aristotle (IV B.C.) in his *Historia Animalium*, by certain pseudo-Hippocratic writers (IV & V B.C.), by Lucretius (I B.C.), by Pliny and Dioscorides (I A.D.). Oribasios (IV A.D.) was also a figure of modest importance, as was St. Jerome of the same period.

It is important to recognize, however, that whatever the knowledge of the Greek physicians in this field, such information was not generally diffused. In fact, it may well be that the information was communicated more by midwives than by physicians.

Such was the case among the ancient Hebrews whose *Talmud* not only mentioned the use intra-vaginally of spongy substances (*mokh*), in addition to *coitus interruptus*, but detailed ethical and medical indications for the use of contraceptive practices. As did all early peoples, the ancient Hebrews disdained sterility; but there is no small amount

of evidence that they also supported contraception to a modest degree.

We have almost no knowledge of the early history of contraception in Japan. Probably the *kabutogata*, or hard condom, and the use of *misugami*, a kind of tampon made of bamboo tissue-paper, do not extend into the remote past. I am inclined to think that they date from the sixteenth century at the very earliest, and perhaps from as late as the eighteenth.

As indicated above, it was the Islamic physicians, the Arabians and Persians, who preserved for the Western world, the contraceptive knowledge of the Greek physicians. The chief contributors were the Persian, 'Alī ibn 'Abbās (X) in his *Royal Book*, the Arabian, Ibn Sīnā, best known to us by his Latin name, Avicenna, in his great *Canon* (XI), the Persian Ismā'il al-Jurjānī (XII) in the *Treasure of the King of Khwārizm*, and Ibn al-Jamī', in his *Book of Right Conduct*.

In the thirty-one different recipes mentioned by these four writers the rational element bulks large. There are only two potions and one magical ritual. Thirteen different suppositories and tampons are mentioned, using the pulp of pomegranate with alum, rock salt, and cabbage leaves with tar. There are nine techniques to be used by the man: in addition to withdrawal, anointing the phallus with such substances as rock salt, tar, onion juice, oils of balsam, sesame, etc. Among the miscellaneous techniques are the safe period—which dates at least from Soranos—now much publicized as The Ogino-Knaus or O.K. [sic] method. Other methods were: avoiding simultaneous orgasms, raising the thighs at the climax, bodily movements to void the semen, etc.

These recipes show clearly the influence of Soranos. But he and other early Greek writers placed their main reliance upon an elaborate array of suppositories of various types, vaginal plugs using wool as a base and impregnated with gummy substances such as sour oil, honey, cedar gum, opobalsam, and galbanum. Astringents such as alum and natron were mentioned by the Greeks. Gummy and oily substances would im-

pede the motility of spermatozoa or even act as positive barriers.

In view of the recent research by Voge and Baker on the chemistry of contraception, the use of native fruit acids intra-vaginally is of considerable interest. Generally speaking, the Islamic physicians erred in not following Soranos's judgment that "very considerable damage" is done by the practice of potion drinking with intent to prevent conception. In like manner the Islamic physicians would have handed on a purer tradition had they, like Soranos, scoffed at the use of amulets—all too frequent in Europe during the Middle Ages.

Two other Arabian sources deserve mention. They are Ibn al Baitār's *Treatise on Simples* (XIII) and Dāwūd al-Antākī's *Memorial*. These represent a definite decline in Islamic contraceptive medicine. The latter especially introduced magical procedures. In some instances the Islamic physicians made the mistake of recommending the insertion of suppositories after, rather than before, coitus.

Discussion of the indications for contraceptive advice has never occupied, in antiquity and in the Middle Ages, the same amount of attention as the techniques themselves. However, the Islamic physicians, following the Greeks, devoted some attention to indications. Ibn al-Jamī, to be sure, overlooked the subject, but 'Alī ibn 'Abbās mentioned "a small uterus" and any "disease which would render gravidity so dangerous that the patient might die during parturition."

Ibn Sīnā (XI) thought contraception indicated for "a small woman to whom childbirth would be dangerous, or . . . [for] women who are suffering from a disease of the uterus or from a weakness of the bladder"; while Isma'īl al-Jurjānī (XII) mentioned a woman "of tender years" and also anyone suffering from a "weakness of the bladder" and cases in which "there is fear that pregnancy will bring on some illness such as incontinence of urine, uterine erosion,

etc." It seems clear from the above that the germ of the preventive point of view was making its appearance in this period; that this is true despite the fact that the most notable gains in the preventive point of view have been made in recent decades.

It is important to observe that while this enlightened, rational medical discussion was going on in Arabian, Persian and Jewish-Egyptian medical treatises, western Europe, from which our civilization has mainly sprung, was cloaked in the obscurantism and scientific indifference of the Christian tradition. When minds are focussed upon another world, they are hardly psychically prepared for grappling with the problems of this. The Catholic Church in this period, implicitly though not overtly, condemned contraception as it does now. The only move it has made since is in the direction of the unscientific approval of the safe period.

Many are the contraceptive recipes that have been handed down in traditional folk medicine. Generally, such beliefs are characterized by irrationality, symbolic magic, knot-tying, etc. It was to be expected that the inventiveness and ingenuity man, lavished on this subject as a result of a strong drive to control reproduction, should result in a few recipes more or less effective. Generally speaking, however, folk medicine was on a low level of rationality.

There are, nevertheless, notable exceptions. How old the use of the sponge is among the rural women of Southeast Poland and in the Ukraine we cannot say; nor can we be certain of the antiquity of the use of bees wax intra-vaginally by German Hungarian women in Banate. The practice of certain women in the Styrian Oberland of stuffing the vagina with cloth or linen rags, is reminiscent of the awful practice, reported in use, at least at one period, among certain African savages. If the practice of certain Constantinople women, who are reported to have soaked sponges in diluted lemon juice and to have used them as vaginal tampons, has any antiquity, it is certainly of great historical importance. But whatever its

age, it was probably more or less effective and certainly ingenious. It is just one more example of what the remarkable process of trial and error has done to shape the conduct of mankind.

The persistence for thousands of years of rational and irrational contraceptive folk beliefs and practices is convincing proof of the thesis that *women have in all cultures and in all ages desired to control fertility. Even when they have disdained sterility, they have desired reasonable and controlled reproduction. What is new, therefore, is not the desire for prevention, but effective, harmless means of achieving it on a democratic scale.*

In our day the condom, or sheath, is one of the most widely used contraceptives (*see CONDOM*).

Since 1800 developments in the history of birth control are so numerous as to render it virtually impossible to present a succinct, balanced summary account. Perhaps the most important question is why the *social* movement was so long in getting started. The answer seems to be that conditions were not ripe for it. Factors promoting cultural lag are also prominent.

Before examining the conditions surrounding the onset of the social movement it is also most important to realize that, even though the birth control movement as a social movement began in England in the 1820's with the propaganda of Francis Place, and in the United States with the writings of Robert Dale Owen and Charles Knowlton, it was really not until the founding of the Malthusian League in England in the late seventies—there was an abortive attempt in the sixties—and, more especially, not until the general educational campaign led by Dr. Marie Stopes in England and Mrs. Margaret Sanger in the United States, that the public conscience became awakened to the importance of birth control as a child-spacing measure, as an instrument for familial and individual freedom as contrasted with birth control as a means of preventing over-population.

The whole stage had been set with the publication in 1798 of Malthus's *Essay*. The second edition (1803) had recommended moral restraint or postponed marriage—not birth control, nor continence within the marriage relation—as the remedy for population pressure and poverty. From this proposal Francis Place reacted. Place believed that this “solution” was just as utopian as the general thesis of the book the *Essay* was written to refute—Godwin's *Political Justice*. The reason was that it put too much of a strain on human nature. In fact, Francis Place's prediction that postponed marriage would not be adopted by the Western World as the solution for poverty and other ills caused by excessive population growth constitutes one of the most remarkable sociological predictions of which history makes record.

Place was a self-taught workingman, who, having been brought up in poverty, with little education, battered about the house by a drunken father, came to know at first hand the miseries of the working class. He dedicated his entire life to the alleviation of these maladjustments according to his best light. Accordingly, birth control was only one of the numerous reforms that he pushed.

Although the publication of Malthus's *Essay* was a factor *immediately precipitating* the public discussion of birth control in England in the 1820's, it was by no means the basic force in initiating the social movement for birth control. It is significant that the social movement crystallized in a century characterized by phenomenal population growth, growing individualism, rationalism, hedonism, feminism, industrialization, materialism, and urbanism. Increasing death control made birth control inevitable. Physicians, by interfering with nature (i.e., with the natural death rate), in some measure created the problem. Hence they have a responsibility to face, not to evade. It was not an increase in births but a marked decline in deaths during the nineteenth century that made the population growth of that century the most

phenomenal (and atypical) in all human history.

The substitution of non-human sources of power for humanly guided tools so increased production, so raised the standard of living that the populations subjected to the economic benefits (as well as strains) of the Industrial Revolution desired a further taste of higher standards of living. When they could not increase income, they limited outgo by curtailing reproduction. The writer's guess is that the twentieth century will come to be known as the period of the rationalization of reproduction just as we associate with the nineteenth century the rationalization of production.

Accompanying this desire to raise the standard of living, and in some measure reinforcing and implementing it, was an intensification of hedonism, utilitarianism and the pleasure philosophy of life. The Stoicism of the Middle Ages was replaced by an Epicureanism. Why change ourselves, when we can alter nature with less pain and disutility? The factory system and modern sanitation made urbanism with overcrowding possible and profitable. This, too, created inducements to family restriction.

In the same way, the gradual breakdown of religious taboos, with the dissolution of the medieval cultural synthesis following the growth of trade, nationalism, etc., released an important brake to interference with nature in reproductive matters. Urbanism, besides causing overcrowding, high rents, stepped up social mobility and intensified communication, the latter especially being a significant factor in paving the way for the democratization of contraceptive knowledge. Broad social and economic forces of this character—there are others—were the real causes of the social movement for birth control. Malthus merely lighted the tinder. And he never would have succeeded in that had it not been for the courage of Francis Place and Richard Carlile.

Place forwarded the birth control movement in this early period by writ-

ing medical handbills for free distribution among the poor. These he distributed through trade union leaders, had them published in one or more periodicals; and there is some reason for believing that they were wrapped around penny boxes of snuff and farthing candles sold in the public market places. John Stuart Mill, while a youth, in company with other young men, helped fling these handbills down the front courts of London houses.

It was Francis Place who educated Richard Carlile (1790–1843), intrepid leader in the liberation of the English press, in the social, medical, and economic aspects of birth control. Carlile was a long while coming round; but when he did so, he got out of hand and published his rather unrefined *What is Love?* (1825), re-issued in amended form as *Every Woman's Book; or, What is Love?* (1826). The importance of this booklet lies in the fact that it is the first treatise in the English language discussing the medical, economic, and social aspects of birth control. Place, in his courageous and thoughtful *Illustrations and Proofs of the Principle of Population* (1822), had not found it advisable to publish a medical discussion, even though his theoretical, social and economic defense of birth control is historic.

The publication of Place's handbills in one periodical led to an interesting and able debate between Francis Place and John Stuart Mill, on the one hand, supporting birth control, and T. J. Wooler, radical, socialistic journalist, on the other hand, opposing birth control. That debate foreshadows many of the modern arguments for and against contraception.

The present writer hopes to publish that debate when the economic situation improves.

In the middle or late 1820's the birth control discussion died out. There is no reason to believe that it was extensive enough to have any material effect on the birth rate.

The social movement in the United States dates from the publication in New York in 1830 of Robert Dale Owen's

MARRIED OF BOTH SEXES

IN

genteel Life.

Among the many sufferings of married women, as mothers, there are two cases which command the utmost sympathy and commiseration.

The first arises from constitutional peculiarities, or weaknesses.

The second from mal-conformation of the bones of the Pelvis.

Besides these two cases, there is a third case applicable to both sexes: namely, the consequences of having more children than the income of the parents enables them to maintain and educate in a desirable manner.

The first named case produces miscarriages, and brings on a state of existence scarcely endurable. It has caused thousands of respectable women to linger on in pain and apprehension, till at length, death has put an end to their almost inconceivable sufferings.

The second case is always attended with immediate risk of life. Pregnancy never terminates without intense suffering, seldom without the death of the child, frequently with the death of the mother, and sometimes with the death of both mother and child.

The third case is by far the most common, and the most open to general observation. In the middle ranks, the most virtuous and praiseworthy efforts are perpetually made to keep up the respectability of the family; but a continual increase of children gradually yet certainly renders every effort to prevent degradation unavailing, it paralyzes by rendering hopeless all exertion, and the family sinks into poverty and despair. Thus is engendered and perpetuated a hideous mass of misery.

The knowledge of what awaits them deters vast numbers of young men from marrying, and causes them to spend the best portion of their lives in a state of debauchery, utterly incompatible with the honourable and honest feelings which should be the characteristic of young men. The treachery, duplicity, and hypocrisy, they use towards their friends and the unfortunate victims of their seductions, while they devote a large number of females to the most dreadful of all states which human beings can endure extinguishes in them to a very great extent, all manly, upright notions; and qualifies them to as great an extent, for the commission of acts which but for these vile practices they would abhor, and thus to an enormous extent is the whole community injured.

Marriage in early life, is the only truly happy state, and if the evil consequences of too large a family did not deter them, all men would marry while young, and thus would many lamentable evils be removed from society.

A simple, effectual, and safe means of accomplishing these desirable results has long been known, and to a considerable extent practised in some places. But until lately has been but little known in this country. Accoucheurs of the first respectability and surgeons of great eminence have in some peculiar cases recommended it. Within the last two years, a more extensive knowledge of the process has prevailed and its practice has been more extensively adopted. It is now made public for the benefit of every body. A piece of soft sponge about the size of a small ball attached to a very narrow ribbon, and slightly moistened (when convenient) is introduced previous to sexual intercourse, and is afterwards withdrawn, and thus by an easy, simple, cleanly and not indecent method, no ways injurious to health, not only may much unhappiness and many misadventures be prevented, but benefits to an incalculable amount be conferred on society.

Moral Physiology, or, a brief and plain treatise on the population question. Owen had been induced to publish this little book—part of the discussion had appeared previously in his excellent freethought journal, *The Free Enquirer*—in order to explain his position in a controversy which had arisen. It seems

ROBERT DALE OWEN UNMASKED

BY HIS OWN PEN.

SHOWING HIS UNQUALIFIED APPROBATION OF A MOST
OBSCENELY INDELICATE WORK, ENTITLED,

"WHAT IS LOVE,

OR,

EVERY WOMAN'S BOOK."

A WORK, DESTRUCTIVE TO CONJUGAL HAPPINESS—REPULSIVE
TO THE MODEST MIND, EQUALLY OF MAN OR WOMAN,
AND RECOMMENDING THE PROMISCUOUS INTER-
COURSE OF SENSUAL PROSTITUTION,

ALSO APPROBATED BY THE PEN OF

FRANCIS WRIGHT.

THE AUTHORESS OF THE CELEBRATED

MASKEIDA ADDRESS,

ADVOCATING THE INDISCRIMINATE AMALGAMATION OF THE
BLACKS AND THE WHITES—THE CONTAINER OF
"FEDDLERIES," AND THE SEVERER
OF DOMESTIC TIES.



New-York:

PRINTED AND PUBLISHED BY CHARLES N. BALDWIN,

NO. 19 CHATHAM STREET.

AND SOLD, ALSO, AT THE LIBERAL BOOK-STORE,

NO. 108 NASSAU, NEAR ANN-STREET.

1850.

TITLE PAGE OF RARE EARLY AMERICAN PAMPHLET
ATTACKING FRANCIS WRIGHT AND ROBERT DALE
OWEN FOR THEIR OPINIONS ON BIRTH CONTROL.

that there was a Philadelphia edition of Carlile's *Every Woman's Book* (no copy known to be extant), and, more relevantly, that there had been issued at the New Harmony Press at New Harmony, Indiana, a prospectus of Carlile's volume. This caused some public rancor. Owen approved the sentiments and arguments of the book and the whole general approach, but not Carlile's rather coarse style. Accordingly, he wrote *Moral Physiology*.

This in turn influenced a gifted, courageous, but somewhat eccentric western Massachusetts physician, Dr. Charles Knowlton (1800–1850), to publish anonymously in New York in 1832 his *Fruits of Philosophy*.

No copy is known to be extant, the copyright copy probably having been destroyed in a Library of Congress fire in the fifties. A unique copy of the second edition, probably published by Abner Kneeland in Boston, is in the Treasure Room of the Harvard College Library. Kneeland was one of the leading freethinkers in the country, and ably edited the *Boston Investigator*.

Knowlton's *Fruits* is distinctive not only as the first medical handbook on contraception produced by an American physician, but as the first really complete and satisfactory account after Soranos's *Gynecology*. It is most remarkable, when we contemplate it now, that Knowlton was able to think so clearly through the main issues of his problem. He was not only far in advance of the medical leaders of his time in this regard, but he was even much in advance of many contemporary physicians,

on the subject of contraception but in his capacity to view medical problems in their economic and social setting. The *Fruits* discussed not only contraceptive technique and not only medical indications for contraception, but the social, economic, and eugenic case for birth control. The pioneering nature of its high quality has never been properly appreciated.

Knowlton claimed to have invented the method of douching with chemicals. I

gether justified; but, at all events, I can say that so far as I know, no one of any importance in the history of contraceptive medicine anticipated him in this regard.

Early editions of the *Fruits* are exceedingly rare. Of the nine editions published up to 1839, only two unique copies are known to be extant. Probably 10,000 copies (approximately) were sold up to about 1840. The last edition Knowlton personally revised was the ninth (1839) edition. This was re-

TO THE
MARRIED OF BOTH SEXES
OF THE
WORKING PEOPLE.

2

THIS paper is addressed to the reasonable and considerate among you, the most numerous and most useful class of society.

It is not intended to produce vice and debauchery, but to destroy vice, and put an end to debauchery.

It is a great truth, often told and never denied, that when there are too many working people in any trade or manufacture, they are worse paid than they ought to be paid, and are compelled to work more hours than they ought to work.

When the number of working people in any trade or manufacture, has for some years been too great, wages are reduced very low, and the working people become little better than slaves.

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the ribbon, and they take care not to use the same sponge again until it has been washed.

If the sponge be large enough, that is; as large as a green walnut, or a small apple, it will prevent conception, and thus, without diminishing the pleasures of married life, or doing the least injury to the health of the most delicate woman, both the woman and her husband will be saved from all the miseries which having too many children produces.

By limiting the number of children, the wages both of children and of grown up persons will rise; the hours of working will be no more than they ought to be; you will have some time for recreation, some means of enjoying yourselves rationally, some means as well as some time for your own and your children's moral and religious instruction.

At present every respectable mother trembles for the fate of her daughters as they grow up. Debauchery is always feared. This fear makes many good mothers unhappy. The evil when it comes makes them miserable.

And why is there so much debauchery? Why such sad consequences?

Why? But, because many young men, who fear the consequences which a large family produces, turn to debauchery, and destroy their own happiness as well as the happiness of the unfortunate girls with whom they connect themselves.

Other young men, whose moral and religi-

When wages have thus been reduced to a very small sum, working people can no longer maintain their children as all good and respectable people wish to maintain their children, but are compelled to neglect them;—to send them to different employments;—to Mills and Manufactories, at a very early age.

The misery of these poor children cannot be described, and need not be described to you, who witness them and deplore them every day of your lives.

Many indeed among you are compelled for a bare subsistence to labour incessantly from the moment you rise in the morning to the moment you lie down again at night, with out even the hope of ever being better off.

The sickness of yourselves and your children, the privation and pain and premature death of those you love but cannot cherish as you wish, need only be alluded to. You know all these evils too well.

And, what, you will ask is the remedy? How are we avoid these miseries?

The answer is short and plain: the means are easy. Do as other people do, to avoid having more children than they wish to have, and can easily maintain.

What is done by other people is this. A piece of soft sponge is tied by a bobbin or penny ribbon, and inserted just before the sexual intercourse takes place, and is withdrawn again as soon as it has taken place. Many tie a piece of sponge to each end of

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ous feelings deter them from this vicious course, marry early and produce large families, which they are utterly unable to maintain. These are the causes of the wretchedness which afflicts you.

But when it has become the custom here as elsewhere, to limit the number of children, so that none need have more than they wish to have, no man will fear to take a wife, all will be married while young—debauchery will diminish—while good morals, and religious duties will be promoted.

You cannot fail to see that this address is intended solely for your good. It is quite impossible that those who address you can receive any benefit from it, beyond the satisfaction which every benevolent person, every true christian, must feel, at seeing you comfortable, healthy, and happy.

printed in 1877 on subscription by a group of advanced thinkers at the Harvard Medical School.

Technically the most important development during the nineteenth century was the invention of the rubber condom and of the Mensinga rubber diaphragm. The latter has been widely employed in clinics all over the world. The inventor of the rubber cervical cap is unknown. This appeared in English advertisements about 1870 or 1880 and in the United States at about the same time. It is rather widely used.

There was considerable development in this period also, especially in the last two decades of the nineteenth century, in making suppositories with cocoa-butter base with various agents supposed to be spermicidal. There was much chemical fumbling in this period and we are by no means over it yet. The most notable advances in the chemistry of contraception have come in the last decade in experiments conducted by Baker and Voge. The latter has written the authoritative treatise on the chemistry of contraception. It is safe to say that the knowledge recently gained on the chemistry of contraception has been very inadequately diffused among those who ought to be informed.

Many suppositories commonly employed until very recent years have operated upon physical rather than spermicidal principles. Thus we have not been so far in advance of the ancients as has been commonly supposed. A few years ago there was an enthusiastic flurry to try out new intra-uterine devices such as the Graefenberg ring. Much of this enthusiasm has now died away, and there is a tendency to be more conservative and use a rubber type pessary and spermicidal paste or jelly. The central difficulty with the Graefenberg ring was that many uteri expelled it. Furthermore, no one has been able to explain with full satisfaction the exact principle upon which it operates. If it results in continued irritation or shedding of the lining of the uterus, perhaps it is not a safe instrument.

We now have approximately 200-500 chemical compounds and mechanical devices used for the prevention of conception in addition to so-called natural methods. Inasmuch as it is impossible to treat these here, readers are referred to the modern handbooks on the subject. The American Birth Control League (515 Madison Avenue, New York City) has issued a good and inexpensive pamphlet on the *Technique of Contraception*.

The clinic movement dates from the founding of a contraceptive clinic by Dr. Aletta Jacobs in Holland in 1881 at which midwives were instructed. In England, the Drysdales and leaders of the Malthusian League had for some years during and after the war planned to open a contraceptive clinic. Various circumstances caused delay, although the Malthusian League began distributing medical leaflets to the public in 1913 upon receipt of a signed statement.

In the fall of 1921, largely through the influence of the Drysdales, the Walworth Women's Welfare Centre was opened in a poor section of London a few months after Dr. Marie C. Stopes opened her Mother's Clinic. The movement then spread to the provinces, and a number of clinics developed which gradually became affiliated with the Walworth Centre. Dr. Stopes moved her clinic to a more central poor location in London, and shortly afterwards initiated a caravan service for the rural sections. Deputations began calling upon the Minister of Health urging him to liberalize regulations preventing officers of state-aided antenatal centers from giving contraceptive information. After considerable agitation the regulations were liberalized, first on medical grounds.

The first clinic in the United States was opened by Mrs. Margaret Sanger in the Brownsville district of Brooklyn in 1916. It was open only a short time, being closed by the police as a "public nuisance." By a judicial decision of Judge Crane, it is now possible in New

York State to furnish contraceptive information "for the cure and prevention of disease." With the passage of time this clause has been more liberally interpreted, and now includes economic applications. One may rightly except the abortive Brownsville attempt and date the beginning of the clinical birth control movement in the United States from the founding, under the aegis of Mrs. Sanger, of the Birth Control Clinical Research Bureau in New York in 1923. We now have approximately 160 clinics in most of the states of the Union. The rural districts are most poorly served; and there are some states without any formal provision for contraceptive advice except for the service of scattered private physicians.

Latterly a new problem has arisen: the social control of the commercial manufacture and sale of contraceptives. The chief problems here are control over harmful or ineffective ingredients and false advertising claims. The better, well-established firms have good ethical standards; but so little capital is required to enter the business, and public demand has increased so considerably of late years, that a number of fly-by-night concerns of rather questionable practices have entered the field. This is annoying both to the medical profession, the public and manufacturers and dealers with high standards. Some form of social control seems imperative in the public interest; but just what form it should take, and just how stringent the regulations should be, is the subject of much controversy. At present no solution has been found.

A noteworthy trend in recent decades in the United States and in England has been the increasing liberalization of medical and religious opinion. Many religious and medical bodies have made public pronouncements in favor of repeal of the American restrictive legislation. To date, this has had little effect upon Congress, although not so many years ago it was impossible to find even a sponsor for a new bill, much less get it before the House or Senate Judiciary Committee. In 1934 a bill was favorably reported but not put to a vote. The trend is certainly in the direction of more enlightened legislative opinion, but legislators have been singularly in-

different to trends in public opinion. This is partly a consequence of the fact that they do not like to touch sex subjects and more particularly a result of the efforts of Catholic pressure groups.

Since the Pope's recent Encyclical on Marriage, a veritable avalanche of books, bearing in some instances official Catholic endorsement, has been published advocating so-called natural methods of birth control. It seems true, if not generous, to conclude that the leaders of the Catholic Church are gradually coming to the conclusion that it is impossible to prevent Catholics from using contraceptives. Accordingly, an attempt is now being made to induce both the Catholic and general public to adopt a method of very questionable scientific value. Catholic leaders seem to feel that it is better to induce the public to adopt a method which will trick it than it is to stand complacently by while church members adopt generally effective scientific preventives.

The Church's political hegemony in the future will be more definitely assured if the old Catholic birth rate can be kept up while that of the Protestants and other opposing sects is encouraged to drop so low as to amount to group sterilization. The ultimate goal of Catholicism would then be achieved by a perfectly peaceful but nevertheless revolutionary process. That the real motive of the Church's leaders in thus sacrificing the health of Catholic women and children for a political and religious purpose is not appreciated by even the liberal thinkers of our time is one of the grotesque stupidities of our time.

Certain generalizations of sociological importance stand out from a study of the history of birth control:

(1) The *desire* for conception control is found in virtually every society and in every age of history. This desire is so universal that attempts to uproot it will doubtless prove futile. A distinction, however, must be made between the universality of the *desire* and of the *practice*. Democratized diffusion of re-

liable, harmless, effective contraceptive knowledge is an ultra-modern phenomenon.

(2) Since the desire cannot be uprooted, it can at best be guided.

(3) If the medical profession does not guide the movement some one else will.

(4) Birth control has survived nearly two thousand years of religious condemnation by Christianity, and has grown increasingly strong.

(5) The medical history of contraception is of much greater antiquity than the social movement, the latter not appearing until the 1820's in response to certain broad social trends.

(6) The immediate task of medical science is to improve our knowledge by more research. The improvement of technique is of more importance than the refinement of indications.

(7) It is exceedingly important that the medical profession recognize social, economic, and eugenic indications as on a par with medical indications. If the profession takes an ultra-conservative attitude, it will be derelict in an important public duty.

(8) We should not allow ourselves to be disturbed by alarmists who point out that, since the population of the United States and of most of the countries of northern and western Europe will become stationary in a few decades, the need for birth control is over. In the first place, the enormous growth of population in the nineteenth century was historically atypical. The normal situation in history is a stationary population. Besides, the need for child spacing on health grounds will always be with us. Once individuals have acquired reliable knowledge in this field, they are not likely to give it up.

(9) It may be that the use of contraceptives will be carried too far by certain classes immediately after freedom is won. This is a very common social phenomenon. But every competent sociologist knows that any social force carried to extremes tends to set up con-

ditions leading to a reverse movement, leading toward the establishment of a new equilibrium. Doubtless this will be repeated in the instance of birth control practice.

(10) Our greatest problem now is to correct the dysgenic effect of the diffusion of contraceptive knowledge. The chief way to do this is to democratize contraceptive information. If we cannot induce those better endowed genetically to have larger families, we can at least see that the defective classes, those of poor endowment, and those who are more or less continually leaners upon the state for support, shall have the means of having small families.

To attempt to trace the future economic and social effects upon society of the birth control movement would be a task far beyond the scope of this article. There is every indication, however, that these effects are likely to be revolutionary, and, in the main, socially elevating.

N. E. H.

BOCCACCIO, GIOVANNI (1313-1375), third chronologically but not least in merit of the great trio of writers who appeared on the Italian scene during the late thirteenth and early fourteenth centuries, was born in Paris in the year 1313.

He was an illegitimate son. His father was Boccaccio di Chellino, a man of small-town origins—Certaldo, whence he derived, being a farm center famous for its onions and located twenty miles southwest of Florence—but he was not a peasant. The elder Boccaccio came to Florence where he set up as a money-changer, and he then went to France on the same business. His mother was not either the *grisette* of one romantic-minded school of thought nor the princess of another. All that we know of her certainly was that her name was Jeanne, and that it may have been Jeanne de la Roche. But good evidence indicates that she was of better, if only slightly better social class, than her lover; and also that the father of the writer seduced her.

In 1316 or thereabouts, Boccaccio, Sr.,

left France and a year later was re-established in Tuscany. Presumably the child came with him. At any rate the first memories of the future author of the *Decameron* were associated with the city by the Arno which was the scene of fully thirty of its stories. He studied grammar there—under Giovanni da Strada, father of the poet Zanobi. Then because Boccaccio, Sr., was eminently, even distressingly, practical, and because it was not recorded that “the poet Homer left any great estate,” he was compelled to turn his attention to *arismetica*. This was in preparation for the business career to which he was destined. The home life of the eager-eyed boy was be-devilled by the constant nagging of his father’s new wife, Margherita di Gian Donati de’ Martoli, who acted—particularly after his half brother, Francesco, was born—like the stepmother of the fairy stories.

But away from home, his days were happier. When he was not at his studies, he moved about the streets of Florence, rubbing shoulders with those “strange fish” he was later to write about, and absorbing delightedly all the life of the city. Or he dawdled at his father’s office, hearing tales of Algarvie and Cyprus; and of the great fair at Barletta; and of how Florentine merchants conducted themselves in Paris—which was just about the way that modern buyers conduct themselves; and of England and of Alexandria and of Tunis. These he did not ever forget.

The next phase was the sojourn at Naples. Boccaccio, Sr., the small independent banker, had impressed the house of Bardi, which was a J. P. Morgan of the day, with his financial abilities, and they took him into their employ. In 1327, they made him manager of their Neapolitan branch, and he removed there. He brought young Giovanni with him. He may have deemed it an act of kindness to remove the lad from his stepmother’s uncharitable tongue. He also probably thought that it would offer an opportunity for a good business training. At any rate, as soon

as he was established in Naples, he bound Giovanni as apprentice to a Florentine merchant in the Porta Nuova quarter, which is close to what is now the seaport. In this uncongenial occupation, the youth who already dreamed haughtily of becoming “one of the world’s famous poets” was obliged, as he put it himself, to “waste irrecoverable time for nearly six years.”

But it was not what he learned in business that makes Boccaccio’s days in Naples important, nor was it what he accomplished as a law student, which was the next occupation imposed on him by his harassed father, and in which he wasted six years more. After all, he is remembered neither as a lawyer nor a business man. The son of an influential banker, he had access to the court of King Robert where he met all those fighters, seafarers, financial adventurers and philosophers who were gathered together in the first intellectually active court of the new era, and thus put himself into stimulating contact with that warm stream of physical and mental awareness, which we call the Renaissance, at the point where it began to flow.

A gay youth and a good-looking bachelor, he was involved also in social amenities. A tomeet intrigue with a low beauty of easy morals, and three love affairs of varying degrees of intensity with ladies of the court, were the natural concomitants of slumming expeditions to the Malpertugio, bathing parties at Pozzuoli, and courts of love in cool gardens in the Nido quarter. Only one of these—with an unknown Neapolitan whom he calls always Abrotonia—was in any way serious. Then on March 30, 1336, in the Church of San Lorenzo, he saw her whom he never forgot. Her name was Maria d’Aquino. She was a year older than he was; the illegitimate daughter of King Robert; and the wife of the Lord of Aquino. Boccaccio celebrated her as Fiammetta, however, and as such she will always be known.

It is impossible to exaggerate the pro-

found, never-to-be-diminished effect that this light-hearted young beauty was to have upon the budding writer who so haplessly looked at her. Immediately, she was the cause of his first published writings—one of which was composed at her direct request, and two in hope of influencing her. Later on, it was the disillusionment that she brought him that made him a great man. It tempered his warm heart with just enough wise cynicism to give him balance. But even in his old age she was not entirely put out of mind. Then, with the convenient lapses of memory that come when the blood chills a little, he idealized her. The flibbertigibbet became a she-saint with her golden hair for halo. He made a sort of Beatrice of her, fantastic as it may seem. In a sonnet written to Petrarch after the latter's death, he placed her in the highest circle of heaven—in the very sight of God.

It was not all at once, however, that this affair reached its crest. It is not even probable that Boccaccio began by visualizing such an end. It was fashionable to woo a lady-love—the customs of Provence having been transplanted to the Bay of Naples—and here truly was a glamorous one. But the young princess found it a novelty to have, after her brainless barons, a poet on her string and she encouraged him. He could not be encouraged with impunity. He followed her, wrote sonnets to her, and importuned her. Finally he took her by surprise. Her husband was away on a trip and he bribed her maid to hide him in her bedchamber. Then just as she was about to fall asleep, he appeared. Either she must yield to him or he would kill himself. A blade flashed in his hand to lend sincerity. Needless to say she yielded. Boccaccio thought fondly that he had won her to his heart. But it was the titillation of a new sensation that had put her in his arms.

The truth, therefore, very shortly succeeded. Affairs took the young author not long afterwards on an extended trip.

When he returned, he found Fiammetta cold to him. White-faced, he followed her to Baia, where he had first slept in her arms. There he found her with another lover.

As if this blow were not enough, another followed on its heels. His father faced financial ruin. Owing to their unwise investments in England, in 1339 the banking houses of Peruzzi and Bardi failed sensationally. Almost all Florence was involved. The adequate allowance which Boccaccio, Sr.,—in spite of disapproving of his ways—had bestowed upon Giovanni suddenly ended. All that was left was a small rental which he had to manage himself. In despair, he fled to Piedigrotta. There he wrote frantically, hoping to keep his mind off his troubles. The next autumn, further bad tidings arrived. His stepmother and his half brother had died, leaving Boccaccio, Sr., alone. Uncongenial as he found his father, young Giovanni could not fail him in this hour of trouble. He left Naples toward the end of December, 1340, reaching Florence, January 11, 1341.

The remainder of Boccaccio's life was—as far as romantic events are concerned—an anti-climax, but it was not without honors or prestige, and it was then that he accomplished most. Obligated to make a living, he became first the secretary of Ostasio da Polenta and then of Francesco degli Ordellaffi, and so distinguished was his service of these petty rulers that the Florentine republic drafted him into their public life. They made him chamberlain of the treasury, special commissioner to purchase Prato from Naples, and sent him on at least seven important embassies, three of which were to various popes. He travelled whenever he was able to. His missions took him to Avignon, Rome, Ravenna, Viterbo, Sienna and it may be to Austria and the Tyrol; but besides that he returned to Naples four times and went to Venice twice as well as visiting most of Italy.

After Fiammetta, his love affairs have been kept reasonably obscure, probably

because they were not serious, but we are sure of at least one—with a certain Emilia (possibly Emilia Tornaquinci) who bore him his daughter Violante of the chestnut hair whose premature death he mourned so exquisitely in a Latin eclogue. He struck up his great friendship with the poet Petrarch, which was perhaps the most genuine and moving in the whole history of letters. He became the true father of the revival of classic learning, collecting every book and manuscript his poor means could afford, and putting up with the uncouth and ill-mannered Leontius Pilatus for nearly two years so that he could learn Greek from him and collaborate on a translation of Homer.

Also he did most of his writing. The *Filocolo*, that unwieldy, modernized version of the mediaeval story of Fleur and Blanchefleur, was begun in the southern city, and the *Filostrato* which is as good a telling of the tale of Troilus and Cressida as exists in any language, and the *Teseide*, was completed there. But the *Ameto*, the *Amorosa Visione*, that fine psychological novel known in English as *Amorous Fiammetta*, and his graceful pastoral, the *Ninfale Fiesolano*, were composed after he had left Naples and his youth; while his *Life of Dante*, which is still of prime value despite Dante pedants, and his four weighty Latin volumes of history and mythology, which are now read only for the scattered vivid autobiographical passages, were written when he reached a certain age.

The latter years of Boccaccio were strangely embittered. As he stoutened into middle age, he fell in love with an attractive widow who led him on, only to make a public fool of him. His answer was a stinging satire, *Il Corbaccio*, in which he dissected widows in general and this one in particular, but he was hurt more than he admitted and his self-esteem suffered mightily. It is a masterpiece of misogyny.

Then, a few years later, he was visited by the monk, Joachim Ciani. Ciani

told him of a vision that he would die soon, and ordered him to burn his books and repent. He would have complied, but for a fine, sensible letter from Petrarch. Next, he made a trip to Naples at the supposed instance of an old friend, Niccolo Acciaiuoli, only to find—when he refused to write a made-to-order laudatory biography—that neither a job nor even a cordial reception awaited him. He retired to Certaldo, the home of his ancestors. Three other trips—in one of which he missed finding Petrarch at Venice—brought but glimpses of joy to him. He was a lonely and unhappy old man.

His last public appearance was in 1373, when the city of Florence decided to sponsor lectures on the poet Dante, and Boccaccio was appropriately appointed lecturer. Nothing could have pleased him more and although seriously ill he dragged himself out of his retirement and delivered fifty-nine. Then, almost in the midst of one he collapsed. But he hardly cared, for he had sung his swan song. He went back to his small-town home, and he never left it. His last link with this mortal world, was snapped when he learned of Petrarch's death. On December 21, 1375, he died.

But it is not the events of his life, interesting, and at times even as exciting as it was, that make it worthy of notice. It is how Boccaccio utilized these events, drawing from the many things he saw, material; and from his tragedies and even from his annoyances, philosophical insight; and making of their combined chemicals a potent and a magical reagent that would slowly and yet certainly transform the son of a middle-class business man with his inheritance of a realistic, almost literal-minded way of looking at things, into one of the richest and most warm-blooded writers that the world has ever seen.

There is no need to discuss his works in detail. It has been said that even if Boccaccio had died before 1348, what he had already produced would have won him a place among Italian writers.

This is incontestible. Nor are his later and more weighty writings without their merits. But it so happens that all of his most vivid qualities were fused into one volume which has guaranteed him immortality. This is the *Decameron*. Professor Arthur Livingston comments on it as follows: "Contrary to the experience of most classics, this book has been read by more persons than confess it." No characterization could be more apt.

In the year 1348, Europe, Italy, and consequently also, "the notable city of Florence, fair above all others" were visited by a mighty affliction. This was that frightful outburst of virulent contagious disease known as the Black Death or the Great Plague. It broke out by the China Sea, reached the shores of the Mediterranean overland, and was carried into Europe by "certain Genoese and Catalan galleys." It is estimated that it destroyed as many as 25,000,000 lives, and probably it came closer to wiping out the human race than anything that has happened before or since.

Fully as disturbing were its moral consequences. There were some, of course, who saw in the Black Death the hand of Deity scourging men for their misdeeds, and these were frightened into revivalistic religion. Most, however, found but a reminder that life was short and death gloomy and final. Boccaccio joined the latter group. For a long time he had been assembling in his mind and in his notebooks a series of gay tales. Now he found a way to set them down. Using as his narrators, three young men—each probably representing a phase of himself—and seven young women—who may have been various of his lady loves—all of whom had fled Florence to escape the plague, he wove all into a single connected book.

No more remarkable volume has ever been written. For it "has" nearly everything. Just considered as prose, it is—in spite of certain Ciceronian mannerisms—artful, full, melodious, colorful and animated. The stories are

in themselves entertaining. The mental point of view is stimulating. Boccaccio has become suave, poised, and sophisticatedly humorous, but his heart still beats humanly. It is a literary treasure house. Just as it has drawn on all sources, so it has inspired—and given material to—such a wide range of writers as Chaucer, Shakespeare, Molière, Madame de Sévigné, Swift, La Fontaine, Goethe, Keats, Byron and Longfellow. Most of all, however, it brings before us the whole cast of characters of a brilliant and a seething period. Here we have the Middle Ages. Men and women out of every corner of its life come crowding up to us. It is as if we rode on some magic carpet that had power over time as well as space, or were able to conjure some of the brightly-colored paintings that hang in various galleries in Florence, Perugia, and Sienna into glittering and vivacious life.

But it is not merely as a sociological or historical document, or a source book, or even as a work of art that this book makes delightful reading. It is also as the manifesto of a straightforward and clear-thinking personality. Such a personality had Boccaccio. And that, incidentally, is why the book was formerly attacked by the church and why it is still often regarded as a work of pornography. For it is in matters of formal religion and sexual convention that anyone who is straightforward is apt to tread on most toes.

An incident dealing with the latter phase will perhaps serve as an example. It is the reply made by Ghismonda to her father Tancred, when he discovered that she has a lover (*Decameron* IV: I):

"It should have been plain to you, Tancred, since you are flesh and blood, that you had begotten a daughter of flesh and blood and not of iron; and you should have remembered—and you should still remember even though you are old—what and of what sort are the laws of youth, and with what potency they work. And although you are a man who spent your best years in the exercise of arms, you should nevertheless know what ease and idleness and luxury can do. I then am also flesh and blood, and I have lived for so short a time that I am still young and full of carnal desire. More-

over, having already been married—"the point of the story being that Ghismonda was a young widow whom her father refused to remarry—"I have known what pleasure it is to give accomplishment to that desire, which has added marvelous strength to it. Unable, therefore, to withstand the strength of my desires, I set myself to bringing about that to which they prompted me and I fell in love. Yet certainly I made every effort to make certain that, as far as I had power, no disgrace either to me or to you should result from that to which my natural frailty moved me."

Having made which effort, she felt that no further justification of her conduct was necessary. It is this point of view, though often less gravely expressed, that gives Boccaccio his bad name. Yet to some it will seem merely obvious physiological and psychological sanity expressed through the medium of common sense.

G. B. Baldelli, *Vita di Giovanni Boccaccio*; Vincenzo Crescini, *Contributo agli studi sul Boccaccio*; Thomas Caldecot Chubb, *The Life of Giovanni Boccaccio*; Henri Hauvette, *Boccace, étude biographique et littéraire*; Edward Hutton, *Giovanni Boccaccio, A Biographical Study*; Angelo Solerti, *Le Vite di Dante, Petrarca e Boccaccio scritte fino al secolo decimo sesto*; John Addington Symonds, *Giovanni Boccaccio as Man and as Author*.

The translations of the *Decameron* by J. M. Rigg, John Payne, Frances Winwar, and Richard Aldington are all good. "Boccaccio Poetry" by Charles G. Osgood gives a complete translation of the biographically important fourteenth and fifteenth books of the *De Genealogia decorum gentium*. The Navarre Society edition of *Amorous Fiammetta* gives a fair idea of this book. All the rest of Boccaccio is best read in Italian.

T. C. C.

BOHEMIANISM, SEXUAL ASPECTS OF. It has been said that bohemians are intellectual proletarians but, as a group, the closest they come to actual defiance of established society is in the realm of sex. Where they fail to mount barricades, they seem fairly consistently to stress unconventional beds. Yet the sex defiance of the bohemians necessarily projects from an economic basis. Their loose and frequent liaisons are caused primarily by their economic insecurity, for the intellectual proletariat can not afford shouldering responsibilities of permanent

marriage solemnized by law. In fact, the Mimis and Musettes of Murger's jolly heroes often served not only as their mistresses, but also as their bread-providers, for where society did not need poets and artists it needed milliners and modistes. The bohemians of yesterday "speared effigies of bourgeois sexual morality" (Horace Gregory), not so much in their conscious revolt against society as in their efforts at the rationalization of their unavoidable poverty-bred free-love unions.

It is significant that Murger's heroines were but temporary sojourners in bohemia, fellow-travelers as it were, staying no longer than they could afford this monetary sacrifice. The more permanent women-bohemians, of social origin equal to that of men-bohemians, appeared when the increasing industrialization of society drew the so-called genteel female from her parental home into the office, the editorial room, or the studio.

Ada Clare, the Queen of Bohemia of Walt Whitman's circle of the 1850s and 1860s, followed the Mimis and Musettes on close chronological heels and was, socially, one rung higher. She was a writer and later an actress, yet her economic foothold was no surer than that of Murger's women or of her men-cobohemians. She was too poor as well as too bold to make a successful victorian marriage, and thus was compelled to be satisfied with a love affair and a child out of wedlock. One suspects an afterthought of defiance when, stopping in American hotels, she registered as "Miss Ada Clare and Son." The efforts at rationalization necessarily gave rise to a bohemian code of morals all its own—an attempt to prove to society at large that, after all, bohemians were not amoral. Thus, Ada Clare's male friends assured the sneering or indignant bourgeois that the Queen of Bohemia was highly virtuous, for she never had more than one lover at a time.

It was with a proud yet dignified boast that Joaquin Miller related his

visit to Boston of 1882, and how three women, two of them totally unknown to him, had sought his body; they said that they admired his poetry and photographs, and later he recalled: "I thanked the Lord that I was a lion in strength that day." He was an itinerant deity to them, to be revered for his poverty and his sacred fire, and the three women as well as the poet saw nothing but highly moral beauty in their fleeting sexual union.

In our own days the *Greenwich Village Quill* publishes a poem entitled "Anti-Virginity Propaganda" wherein a virgin is quite sincerely pitied for her impediment preventing her from joining "women whose feet are mercury-spun, whose lips are red and kissed and wise, uncarmined with a paint of lies."

But with years, the attitude of society was undergoing a slow change. In the 1890s, young women of the middle class longed to be Trillbies and pose for the artists without undressing, and be called bohemians, yet remain virgins or respectably married matrons. When some members of the Cypher Club, a popular bohemian organization of Chicago, became unwed mothers, society was scandalized. When, in 1900, Isadora Duncan lost her virginity to a Hungarian actor, her mother and sister stormed and wept; it was one thing for them to bohemianize it cheerfully with her in a Chelsea graveyard or in a Paris studio above the bedlam of a night printery, and quite another to see their pet give away her purity unwed.

But a decade and two later the economic situation of the middle class became such that many more women had to sacrifice conventions if they wanted sexual gratification. Without being artists or dancers, and without even pretending at bohemianism, they were driven to sexual freedom by the increasing lack of money on which to marry. It is here that the free-love pioneering of bohemians proved of moment to society at large. They showed the fearless way to sexual freedom. Moreover, they publicized their new code of morals

in innumerable novels and poems. To quote Floyd Dell, "when any publicist or novelist has spoken a kind word about these necessitous compromises, it has been hailed by a large number of young people eager for some idealization of a situation which they face or already find themselves in."

Naturally enough, also those took advantage of the new code who, according to the bohemians, stood in no righteous need of it. In the 1920s, rich brokers, affluent interior decorators, and prosperous advertising men and women moved to Greenwich Village, Taos and Telegraph Hill, for the express purpose of fornication and adultery under the cloak of artistic sophistication. The mode of love, the avowed aim of which once was to *épater la bourgeoisie*, has been taken over by the very same bourgeois as rudely as they always bought or grabbed other creations of the artist. "The speakeasy," complained Joseph Freeman, "lifted to a 'higher level' the drinking, the sexual experiments and the wit of the Pirates Den."

For in the Greenwich Village bag of experiments, the prosperous bourgeoisie found free love not alone. There was, for instance, freedom from jealousy that supposedly went with truly free love. An interesting illustration of this theory and its practice is contained in Floyd Dell's short story "A Piece of Slag." A young idealist of Greenwich Village believes that husband and wife should not be possessive of one another, that each should openly and physically yield to a temporary infatuation and yet continue to love, and be loved by, one's permanent spouse. His young wife tries to admire him when he tells her he was unfaithful to her, and he, in his turn, urges her to go to bed with a friend whom she likes. "It's something all lovers can experience—if only they know the truth and aren't afraid of the opinions of the herd."

Again, the herd was defied in the bohemians' attitude toward prostitution. The patriarchal society of the nineteenth century was horrified at the ease with

which the early bohemians of Paris tolerated the street-walking of their mistresses when sewing or millinery was scarce. George Gissing of "The New Grub Street" shocked his British compatriots when he, however idealistically, sacrificed his best years to a prostitute, stealing and going to jail for her, and finally marrying her. But early in the twentieth century, in Russia, the bourgeoisie applauded Leonid Andreyev and his "Days of Our Life" where, with lachrymous sentimentality, he pictured the Moscow student-bohemians and their starving prostitute-friends.

In the 1920s, in Greenwich Village as well as Montmartre, the well-fed brokers and bond-salesmen did not seem to care whether their girl-friends were mistresses for a year or prostitutes for a night; they exhibited them in public with an ease with which the nineteenth-century bourgeois had exhibited their respectable fiancées. In literature, a striking reflection of this phenomenon is to be found in Edmund Wilson's "I Thought of Daisy"; prostitutes appear to ply their trade at a Greenwich Village party of pseudo-bohemians, and none, except the author, seems to be outraged.

In the stable 1920s, as prosperity temporarily favored bohemians, and as their free-love unions resulted in children, the bohemians legalized these unions and moved to suburbs (indeed, Croton-on-the-Hudson has been popularly called "Greenwich Village gone pregnant"). Love relations of types even less acceptable to society now became obvious in the Village. Lesbianism and male-homosexuality became more and more common. Nor were these practices considered immoral or unhealthy by the bohemians, and the same attempt was made to rationalize them into plausible, natural, high-sounding theories as had so brilliantly succeeded in the older matter of heterosexual free love. Again novels, plays, poems came out in a stream, now explaining and extolling homosexuality. And now the bourgeois playing at bohemianism

moved to studios in order to do the forbidden or frowned-upon things in comparative safety and with convenient intellectual justification. The Oscar Wildes and Paul Verlaines had paid the price and paved the way for these moneyed philistines of the later day.

Nor was this homosexual aspect of bohemia an isolated phenomenon. Geographically it appeared as far East as Russia. Professor Reissner wrote of the pre-revolution bohème of his country: "And we, as in the West, had a blooming of 'passions,' free marriages with endless divorces in every form of monogamy, polygamy, polyandry until the openly practised homosexuality was reached." He cited the example of a talented poet-novelist who never failed to introduce to his enthusiastic admirers "his wife of male sex, who even made, under the writer's wing, a literary career of a sort."

It was the hope in and out of Russia that a thorough-going social revolution of the Soviet type would put a natural end not only to the sexual problems and experiments of the bohème, but indeed to the bohème itself. With the clear-cut ideal of a new society before him, with a modicum of economic security given him by the Socialist State, the bohemian with his maudlin drinking, pathetic poetry and excessive sexualizing was bound to disappear.

Yet, in Soviet Russia of the 1920s, bohemia did exist. If the Communists said that sex should be no problem, that man should take sex as easily and sensibly as he would a drink of water, the bohème of Leningrad and Moscow—to use another current phrase—made a mud-puddle out of the drink. "Only," complained Reissner, "in the good days of Murger there was more of culture and of respect for woman, and the old Russian students were considerably restrained by their 'intellectual honesty.'" The bohème of the early Soviet period, he wrote, "develops into a crude, bestial use of woman's youth and kills human lives." He blamed the old babbitts of Russia and its influence extending into the new times.

However, the 1920s with the New Economic Policy were a transitory period of compromise in the life of the Soviet Union. The latest era, beginning with the Five-Year Plan and continuing into the present, is distinguished by that all-embracing process of socialization and purification of life which, it

was always hoped, would dispose of twilight zones in the class structure—the bohème, among others, and all it stood for. Indeed, we hear little or nothing about bohemia and its problems, sexual and others, from the Soviet Union of the 1930s.

Henri Murger, *Scènes de la vie de Bohème* (The Latin Quarter), 1848; M. A. Reissner, *Bogema i Kulturnaya Revolutziya* (The Bohème and Cultural Revolution, in Pechat i Revolutziya, The Press and Revolution, Moscow), July–August, 1928; Floyd Dell, *Love in Greenwich Village*, 1926, and *Love in the Machine Age*, 1930; Joseph Freeman, *Greenwich Village Typers* (in New Masses), May, 1933; Horace Gregory, *Yesterday in Bohemia* (in the New Republic), June 21, 1933; Albert Parry, *Garrets and Pretenders, A History of Bohemianism in America*, 1933.

A. P.

BONA DEA. The goddess of chastity at Rome. It was unlawful for men to enter her temple. (Macrobius, *Saturnalia*, 1, 12; Lactantius, 1, 22.) But as we see from Juvenal (2, 84ff.; 6, 314ff. and 335ff.), the temple of the Bona Dea became the scene of all but unbelievable orgies, including the intercourse of women with the Priapic ass.

BRADLAUGH, CHARLES (1833–1891), English Freethought author, lecturer, editor, Member of Parliament, birth controller. Born the son of a lawyer's clerk, Bradlaugh, partly through native intellectual curiosity and independence, partly through the malicious interference of a reactionary clergyman (who played a major rôle in driving him from his home into the army as a lad), came to devote his life to freeing English minds from orthodox religious superstition. He became one of the outstanding pamphleteers of England during the second half of the nineteenth century.

After leaving the army young Bradlaugh apprenticed himself to London lawyers and thus acquired much experience in lower courts that was to stand him in good stead in numerous subsequent law suits.

A youthful love affair with Hypatia, daughter of Richard Carlile (q.v.), came to naught. Friends of this period

were Austin Holyoake who later published a Malthusian pamphlet *Large and Small Families* (1870), and G. J. Holyoake, Secularist editor, defender of Dr. George Drysdale's *Elements of Social Science* (1854), the enormous sale of which in succeeding decades (35 English editions, 10 foreign translations) did much to inform and liberalize English opinion on sexual subjects, including birth control (Malthusianism as it was then inaccurately and euphemistically referred to).

In 1855 Bradlaugh married (age 22), and three years later succeeded G. J. Holyoake as president of the London Secular Society; and in 1866 was elected president of the National Secular Society. In 1860 he started a radical weekly, the *National Reformer*, published continuously until 1893. In policy it was republican, atheistic, Malthusian.

The *National Reformer* had hardly been founded when Bradlaugh's Malthusianism and his belief in the need of general sex education led to a breach with his co-editor, the mercurial Joseph Barker. Bradlaugh approved in print and on the platform the general purpose of Drysdale's *Elements*. Besides he had early published certain Malthusian pamphlets now very rare: *Jesus, Shelley and Malthus* (1862); *Poverty and Parliamentary Reform* (1863); *Poverty and its Effects on the Political Condition of the People* (1863); *Labour's Prayer* (1865); and *Why do Men Starve?* Similar articles, not reprinted as tracts, appeared in the *National Reformer*, which did more to further birth control in England than any other nineteenth century periodical except the *Malthusian* (1879–1922). Bradlaugh also supported the short-lived Malthusian League of the 'sixties, led by Drysdale.

This activity led to nearly as much abuse as the espousal of heretical religious views. As he hated religious narrowness and bigotry, he became an arch enemy of political and economic injustice. His main audience was the intelligent among the British working class, with a sprinkling from the middle class. His power as an orator was surpassed by few in his generation. Because he refused to take an oath and wished to affirm, he was debarred from taking his seat in the House of Commons; and had to be re-elected four times before the storm blew over. Later his Affirmation Bill was passed, making affirmation for freethinkers legal. Bradlaugh moved from one storm center to another, making frequent use of the law.

Perhaps it is not too much to say that his chief claim to remembrance lies not so much in his Secularistic activities as in his defense of the publication of contraceptive knowledge. For if, as Dr. Warren S. Thompson has lately said, "when the history of the Western World is written a century or two hence . . . spread of contraception will be regarded as one of the most important factors in determining the course of social evolution in the latter part of



the nineteenth and the first half of the twentieth century,"¹ then, surely, Bradlaugh's place in the history of that great social change will be conspicuous and permanent. For his courageous fight for the right to publish Knowlton's *Fruits of Philosophy* did much to establish in England the legal right to disseminate contraceptive literature at a low price, subject, of course, to the common law of decency.

The circumstances were briefly as follows: One Cook of Bristol sold the pamphlets, *allegedly* with pornographic prints interleaved, and was successfully prosecuted. The printer of the *National Reformer*, Charles Watts, when he pur-

chased a freethought publishing business, acquired some plates of the *Fruits of Philosophy*. He ran off copies and sold them. Arrest threatened. Bradlaugh claimed that Watts agreed not to plead guilty to obscenity but to fight the case in the courts; that Watts later became "cowardly" and changed his mind when faced with danger. In the polemics that followed, very difficult to sift, Watts declared he never agreed to plead not guilty. Bradlaugh thereupon discharged Watts as his printer. Mrs. Annie Besant (q.v.), somewhat to Bradlaugh's embarrassment, insisted upon fighting the case with him. The Free-thought Publishing Company was accordingly set up as a partnership, the *Fruits*, slightly revised, brought up to date in its physiology, the subtitle changed, copies printed and public notice given the police of the time and place of sale. Arrest promptly followed.

The case came before a municipal court in London. Counsel offered to drop the prosecution against Mrs. Besant, but she would not be left out. On a writ the case was soon transferred from the Central Criminal Court to a judge and special jury. The trial lasted four days. Mrs. Besant handled most of the social argument and Bradlaugh instructed her in what to say and what not to say. There were difficulties in securing expert testimony. Darwin, whose theory of natural selection was based on the "prodigality of nature," but who did not accept Neo-Malthusianism, pleaded weak health (true enough). Bohn, the well-known publisher was a valuable witness as were Dr. Alice Drysdale Vickery and Dr. Charles Drysdale on the medical side.

Sir Hardinge Gifford, Solicitor-General, branded the *Fruits* as a "dirty, filthy book." His language was so extreme at certain points that it had to be expunged from, or paraphrased in the reports. He avowed, however, that the prosecution, probably brought by the Vice Society, was "most mischievous in its character and probably in its

¹ *Population and Social Work* (Proc. Nat'l Conf. Social Work, Kansas City, 1934. Chicago, 1935, p. 86).

result." He thought the police felt compelled to act. Lord Chief Justice Cockburn, in summing up avowed that "a more ill-advised and more injudicious proceeding in the way of a prosecution was probably never brought into a court of justice." He considered the *Fruits* a medical book. The jury, out an hour and a half, and quite confused, returned a verdict tantamount to guilt: The book was "calculated to deprave public morals"; but the defendants were exonerated from any corrupt motive in publishing it.

Later it was alleged that six of the jury had not intended to assent to a verdict of guilty; that the others were greatly moved by orthodox religious motives, as might have been expected. Bradlaugh submitted three motions: (1) to quash the verdict; (2) to arrest judgment; (3) to re-try the case. The Solicitor-General pointed out that the defendants were continuing sale of the offending book and that Mrs. Besant had publicly boasted that the Justice's summing-up had been in her favor. Justice Cockburn, now irritated, refused to grant the motion to stay execution and sentenced the defendants to six months' imprisonment and to a fine of £200. Just as they were being led from the dock, Justice Cockburn "on consideration" offered to stay execution on a pledge not to sell the book until the Court of Appeal had decided the case. When this was agreed to, the defendants were liberated on their own recognizances of £100 each. In the Court of Appeal in February, 1878, the prosecution was quashed on a technical point: the original indictment being found defective, since it did not set forth the grounds of the offense. Thus was the judgment reversed. Some copies of the *Fruits* were then sold printed in red ink across the cover "Recovered from the Police."

As I have shown elsewhere,² the effect was electric. Many new editions appeared in the English provinces.

² See herein the articles on BIRTH CONTROL, HISTORY OF, and KNOWLTON, CHARLES.

Mrs. Besant issued her *Law*. Millions of contraceptive tracts were disseminated in the next few decades, and the Vital Revolution³ had now been started in earnest. The declining birth rate spread from England to northern and western Europe, and, more latterly, is beginning in the Orient. These changes were, of course, chiefly the result of long-run, impersonal social and economic forces; yet it must always be realized that such forces, in the last analysis always operate through human beings, and that, accordingly, the insight and courage of fearless leaders is always a factor which cannot be neglected if we are to appreciate historical changes in their proper perspective.

H. B. Bonner, *Charles Bradlaugh* (1895); J. M. Robertson, *Charles Bradlaugh* (1920); Bradlaugh's *National Reformer*. Charles Knowlton, *Fruits of Philosophy*, London: Free-thought Publishing Co., 1877 and later. *In the High Court of Justice Queen's Bench Division, June 18th, 1877. The Queen v. Charles Bradlaugh and Annie Besant. Specially Reported*. London, n.d. (1878).

N. E. H.

BREEDING. The systematic improvement of domesticated animals or plants aims at specific ends by the selective mating of those individuals which are nearest to the desired type, whether produced by spontaneous variation within the group, or induced by crossing, or other artificial means such as the use of the x-ray or other influences able to affect the germ plasm.

Successful breeding depends upon the principles that: (a) Every individual possesses ALL the characters of the race in some proportion. (b) This proportion varies with different individuals, affording a basis for selection. (c) These racial characters are carried by definite but not inflexible physiological units called genes. (d) The genes of every individual carry more characters than can ever develop in one lifetime. (e) The development depends not only upon

of high birth and death rates—an absolutely new occurrence in human history.

the natural intensity of the character but also upon the environmental opportunities afforded by the surroundings, such as size, dependent upon the food supply; mental ability, dependent upon education and training as with horses, dogs, etc. (f) All these factors must be considered at MATURITY when the selection is made as well as the natural faculties which appear in youth as with sledge dogs which are potential leaders. (g) New combinations can be effected by mating together strains not before united, as in crossing. (h) In all bisexual species the results of all mating are in harmony with the binomial theorem, $x^2 + 2xy + y^2$ as regards the relative intensity of characters in the resulting population. (i) Through internal causes not understood nature occasionally produces, suddenly, new combinations not hitherto known (mutations), and that these often hasten the process of improvement.

E. D.

BREEDING OF CROP PLANTS.

Standardized methods of plant breeding have been developed that are applicable to several categories of crop plants. Information regarding these methods and the genetics of crop plants is given in considerable detail by Hayes and Garber (*Breeding Crop Plants*), by Crane and Lawrence (*The Genetics of Garden Plants*, 1934), and in technical bulletins and journals.

These standardized methods resulted from the application of genetic principles, including the rediscovery of Mendel's Laws of Heredity (1900), the subsequent development of the chromosome theory of heredity, the growing appreciation that normal characters are a result of the interaction of large numbers of genetic factors, the general acceptance among plant geneticists that quantitative characters are inherited in the same manner as qualitative characters, and a rather generalized acceptance of the view that hybrid vigor, or heterosis, is explainable on the basis of the partial dominance of linked growth factors.

Particular methods of breeding will be outlined and illustrations will be given of their application. Crop plants may be classified on the basis of their mode of reproduction into two general groups: 1. Asexual. 2. Sexual.

The Asexual Group

SELECTION OF BUD SPORTS.—The asexual group is propagated by such means as cuttings, grafting, tubers, etc. The progeny of a single plant propagated asexually is similar in its inheritance to the parent plant except for occasional mutations, or sudden inherited changes. These changes occur somewhat more frequently than was formerly believed to be the case and consequently selection of individual bud sports is an important means of isolating new races that are more desirable in some individual character. Shamel and coworkers (*U. S. Dept. Agr. Bul.* 1483, 1927 and other reports) have given numerous illustrations with citrus fruits and have emphasized the importance of such changes. Shamel and Pomeroy (*Journal of Heredity*, 1932, 173–180) list 173 cases of important bud sports with apples. This gives some idea of the extent of mutations in asexually propagated plants.

SELECTION AGAINST DEGENERATION DISEASES.—With certain plants that are propagated from tubers, such as potatoes, tuber selection plays an important rôle in keeping the variety free from such degeneration diseases as leaf roll, curly dwarf, spindle tuber, etc. The grower uses a seed plot method and by the following means; tuber indexing or some similar plan, the increase of stock that is relatively free from disease, the certification of seed tubers and the production of tuber stock in areas that are relatively free from disease, it has been possible to greatly improve the tuber stock of the individual grower and make this stock available to the commercial producer of potatoes.

Somewhat similar control methods are used for the production of stock from raspberries that frequently are injured

by mosaic. These methods for the most part are not practiced for the purpose of obtaining improved inheritance but as a means of controlling transmissible diseases that may be carried by the stock used in propagation.

Classification of Crop Plants on Basis of Mode of Pollination

Crop plants that are propagated by sexual methods may be classified on the basis of their mode of pollination and such classification is of basic importance, since there is a close relation between methods of breeding and mode of pollination. While there is no sharp demarkation between the limits of the various groups, these groups may serve a useful purpose in the standardizing of methods of breeding with particular crop plants. The following classification may be made:

NATURALLY SELF-POLLINATED PLANTS.

—Including barley, wheat, oats, flax, tobacco, peas, beans, soybeans, cowpeas, tomatoes, peppers, etc. Within each crop there is wide variation in the frequency of cross pollination depending upon environmental conditions and inherited strain differences. In general the plants of this group show less than 4 per cent of cross pollination.

OFTEN CROSS-POLLINATED PLANTS.—Including cotton, sorghums, some sweet clover varieties, and other plants where the frequency of cross pollination is greater than in group 1 although self-pollination occurs frequently. Within this group there is, in general, no marked reduction in vigor when selfing is artificially and continuously followed. As an illustration note the studies of Kearney (*U. S. Dept. Agr. Bul.* 1134, 1923), with Pima cotton where continuous self-pollination through seven generations gave no reduction in vigor when compared with the original stock.

NATURALLY CROSS-POLLINATED PLANTS.

—Including maize, rye, clovers, alfalfa, sunflowers, many grasses, most fruits, cabbage, vine crops such as melons, cucumbers, squashes, etc. This group contains a wide diversity of breeding be-

havior and in many cases methods of breeding have not been standardized. With corn, for example, there is nearly 100 per cent of cross-pollination, little or no self-sterility, when self-pollination is practiced, and great reduction in vigor in self-pollinated lines as homozygosis is approached. Sunflowers, however, are highly self-sterile although vigorous self-fertile inbred lines have been isolated (R. I. Hamilton, *Sci. Agr.*, 1926, 190-92).

Most crops in this group show considerable reduction in vigor when selfing is practiced although this is not universal. The extent of reduction in vigor appears to depend upon the extent to which undesirable recessive characters are found that are carried along in the heterozygous condition.

With squashes, Cummings and Jenkins (*Vermont Agr. Exp. Sta. Bul.*, 280, 1928), report that 10 generations of artificial self-pollination resulted in no general reduction of vigor. While this is sufficiently unusual to be noteworthy, it is in agreement with the conclusions of East and Jones (*Inbreeding and Outbreeding*, 1919), who decided that inbreeding was not injurious "merely by reason of the consanguinity" but that the only harmful effect comes from the inheritance received. Correctly used inbreeding is a means of controlling heredity and makes controlled selection possible.

Because of this wide diversity of type, and in many plants a mixture of self-sterile and self-fertile strains, no one standardized method of breeding has been developed that is applicable to all members of this group.

DIOECIOUS.—Some of the important plants of this group are hops, hemp, date palm, spinach and asparagus. These plants are always cross-pollinated and may be handled in the same manner as self-sterile plants of the cross-pollinated group.

Breeding Self-Pollinated Plants

Methods of breeding may be classified as follows:

1. Introduction. 2. Selection. 3. Hybridization: a. The pedigree method; b. The bulk method; c. Backcrossing.

INTRODUCTION.—This is not in itself a method of breeding but a means of utilizing the wild or native plants from our own or foreign countries or the product of other breeders. E. D. Merrill (*The Scientific Monthly*, 1932, 362–65) emphasized the antiquity of cultivated crops and states, “that every important food-producing cultivated plant was already in cultivation at the dawn of recorded history.” He further states that the places of origin are localized and agree with the centers of origin of civilizations. Important crops of American origin are maize, sweet and Irish potatoes, beans, squashes and pumpkins, and in the tropical regions cassava, arrowroot, chayote, and some fruits. This relatively short list emphasizes the great importance to our country of plants introduced in earlier or recent times from the Old World. Merrill listed 13 cereals, 30 vegetables, and 17 fruits of Eurasian origin.

SELECTIONS. — With self-pollinated plants the occasional cross between strains with different genetic nature leads to the production of new types with a different combination of characters. This furnishes the chief basis for inherited variations although spontaneous inherited changes called mutations may occur also.

Natural self-pollination leads rapidly to homozygosity and several generations after a cross the greater proportion of plants are homozygous, i.e., produce like gametes, and for this reason the progeny of individual selected plants breed true, for the most part, if the progeny of each plant selected is kept separate and increased. This leads naturally to what is known as the individual plant selection method with self-fertilized crops. This may consist of a collection of more important varieties for the region or a visit to the farms where the varieties are under cultivation and the selection of a large number of heads, spikes, or individual inflorescences from plants of

the more promising varieties. The progeny of each selection is grown individually, yield and quality comparisons are made, and the better types are distributed eventually as new varieties. This method of breeding is based on Vil-morin's Isolation Principle, formulated in 1856, from which he concluded that the only sure way to evaluate the importance of a particular selection was to grow and examine its progeny, as well as Johannsen's pure line theory introduced in 1903. According to Johannsen, the progeny of a single, self-fertilized, homozygous, plant constitutes a pure line within which further selection is of no avail.

The individual plant method of selection has played a very important rôle in plant improvement. A few illustrations of accomplishments will be given.

The white pea bean, M.A.C. Robust was produced at the Michigan station and introduced in 1915. Disease resistance and vigorous growth habit have made it very popular and at present it has been estimated that 75 per cent or approximately 375,000 acres of this variety are grown in Michigan annually.

About 20 years ago bean diseases were serious in western New York and Robust was introduced, single rows being planted in the middle of bean fields. R. A. Emerson of the Cornell University station has stated, “I have no hesitancy in saying that the Robust, because of its resistance to this one disease, mosaic, saved the pea bean industry of western New York.”

In the early history of flax growing the crop was produced on new breaking and certain diseases, such as flax wilt, were not a menace. Gradually the flax seed crop progressed in a westerly direction until there was no new soil for future crops. It then became necessary to grow the crop on old land. There was a gradual accumulation of certain disease-producing organisms in the soil and many serious crop failures followed. Bolley, of the North Dakota station, found that by growing the crop on “wilt sick soil” that some plants appeared

resistant. These were selected and varieties obtained which had the power of resisting the disease. More recently, selections have been produced which are resistant to both wilt and rust. The varieties Bison and Redwing, produced by selection at the North Dakota and Minnesota stations, respectively, are now grown extensively in regions where formerly there were enormous losses from wilt and rust. The variety of shade-grown tobacco, known as "Cuban," grown widely under test in the Connecticut Valley, was produced by selection.

A large percentage of our varieties of self-pollinated plants among such important and widely grown farm crop plants as wheat, oats and barley, flax, peas, beans, and tobacco were produced by this method of breeding.

HYBRIDIZATION.—A knowledge of the needs, furnishes the breeder the necessary information for the selection of the parents. They should be chosen in such a manner that they together combine the characters desired in the improved variety. In the production of new varieties by hybridization the plant breeder makes a direct application of Mendel's Laws of Heredity as we know them to-day.

The following description gives an illustration of the inheritance of characters in a wheat cross. It should be emphasized that many characters are dependent upon the interaction of several inherited factors and when the parents differ by more factor pairs the difficulty of obtaining the desired combination of characters is materially increased although the fundamental principles are unchanged. The parents used in our illustration are Marquis, which is an awnless (tip awned) wheat, susceptible to stem rust; and Hope, a bearded variety, resistant to stem rust. In the cross there is a dominance of the awnless condition over the bearded and of resistance to rust over susceptibility. The type desired is awnless and resistant to stem rust. Allowing the dominant condition of a factor to be represented

by a capital letter and the recessive condition by a small letter, the factorial relation of these varieties may be represented as follows:

Marquis	
Awnless	AA
Susceptible	rr
Hope	
Bearded	aa
Resistant	RR
First generation plants, F ₁	
AaRr (awnless and resistant)	
Gametes of F ₁	
AR, Ar, aR, ar, in a 1:1:1:1 ratio	

The recombination of F₁ gametes to produce zygotes is illustrated by the use of the Punnett square.

		Male Gametes			
		AR	Ar	aR	ar
♀	Ar	AARR	AARr	AaRR	AaRr
	Ar	AARr	AArr	AaRr	Aarr
	Ar	AaRR	AaRr	aaRR	aaRr
♂	ar	AaRr	Aarr	aaRr	aarr

It will be noted that the homozygous types which will breed true, i.e. produce progeny with hereditary characters like their immediate parents, AARR, AArr, aaRR, and aarr, are located on the diagonal in the above illustration. The numbers in each of the nine different classes and their breeding habit are given in the description on page 72.

It will be observed that the first generation of the cross was awnless, although the tip awns are slightly longer than those of Marquis; and that the plants are resistant to stem rust as is the Hope parent. The reproductive cells, or gametes, of the F₁ are of four sorts, two like the parents and two of a new combination. The hereditary characters of the male and female reproductive cells are of like nature. The four types of gametes recombine to produce nine different hereditary combinations of factors in F₂. The type marked with a **, AARR, will breed true for awnless habit and resistance to stem rust, as it is duplex for the determiners or genes for both these characters. Thus, on an average, in F₃, one line out

F_2 plants*	Zygotic formula	Breeding habit in F_3
	1 AARR**	Will breed true for awnlessness and resistance.
9 awnless resistant	2 AaRR	Will segregate for beards vs. awns and breed true for resistance.
	2 AARr	Will breed true for awnlessness and segregate for disease reaction.
	4 AaRr	Will segregate for both characters.
3 awnless susceptible	1 AArr	Will breed true for awnlessness and susceptibility.
	2 Aarr	Will breed true for susceptibility and segregate for awns vs. beards.
3 bearded resistant	1 aaRR	Will breed true for beards and resistance.
	2 aaRr	Will breed true for beards and segregate for disease reaction.
1 bearded susceptible	1 aarr	Will breed true for beards and susceptibility.

of every 16 will breed true for the characters desired.

Factors carried in non-homologous chromosomes are independently inherited as in the illustration given here. When they are in the same chromosome there is a tendency for an association between the factors in the F_1 plants and more gametes or reproductive cells like the parents are obtained than new combinations. Thus Ar was the Marquis gamete and aR was produced by Hope. If these were genetically linked the new types or new combinations AR and ar would be less frequent than the parental types and larger numbers of plants during the segregating generations would have to be grown to obtain the type desired.

As has been noted there are three general methods of breeding under this heading. 1. The pedigree method. 2. The bulk method. 3. Backcrossing.

THE PEDIGREE METHOD.—The following summary is based on crosses with spring wheat.

First year.—Make the cross between parents selected because of their known characters. If a greenhouse is available,

* F_1 , F_2 , etc., stand for 1st, 2nd, etc., filial generation.

** The type desired.

the F_1 generation may be grown the same year the cross is made.

Second year.—Grow several thousand plants spaced so that individual plants can be studied. If disease reaction is of interest, it is desirable to obtain an artificial epidemic of the disease or diseases to be studied. For spring wheat, stem and leaf rust infection is studied in one nursery and reaction to such diseases as scab, bunt, and root rot in another. Notes on black chaff are taken in both nurseries. Resistant plants that appear desirable in other characters are threshed individually and selection is made on the basis of seed characters.

Third to fifth year.—**Primary** lines of 25 to 50 plants are grown in the disease gardens, each line consisting each year of the progeny of a single plant. The seeds are spaced in the row so that individual plants can be studied. By the fifth generation some of the lines will appear homozygous (all plants alike) for disease reaction and of like habit for other characters, such as the presence of beards, height of plant, and time of maturity. These lines are harvested by the individual plant method and threshed individually, and the grain is examined. If all plants produce grain of like shape, color, and type, the seeds

of all plants of the line are bulked and furnish the material for a yield trial.

Sixth to eighth year.—Yield trials are conducted in rod rows. Further tests of agronomic characters and reaction to disease and preliminary milling and baking trials are carried out as with selections.

Ninth to eleventh year.— $\frac{1}{40}$ acre plot trials and milling and baking tests are carried out as with selections.

Twelfth year.—Increase of the best sort for distribution.

A new variety of spring wheat produced at the North Dakota station by L. R. Waldron from a cross of Marquis x Kota is now grown widely in the Northwest spring wheat area. The Kota parent had moderate resistance to black stem rust while Marquis is very susceptible. Ceres combines the good qualities of Marquis, i.e., high milling and baking quality and desirable agronomic characters, with the rust resistance of Kota and has higher yielding ability than either parent.

A recent production of the Minnesota Agricultural Experiment Station named Thatcher resulted from a more complex cross.

Marquis x Iumillo

Marquis x Kanred

Thatcher

The product of the specific cross between Marquis and Iumillo (durum) was selected for the chromosome number of Marquis to which was added field resistance to black stem rust obtained from the Iumillo parent. The wheat obtained had good milling and baking quality but had a tendency to produce a yellowish loaf of bread.

The cross between Kanred winter wheat and Marquis combined immunity to many forms of stem rust obtained

from the Kanred winter wheat parent with spring habit of growth of its Marquis parent but proved susceptible to certain rust forms commonly present in the spring wheat belt.

Thatcher, produced by selection from the double cross combines immunity to certain forms of rust with field resistance to many and perhaps all forms, has good yielding ability, and desirable agronomic characters and appears equal to Marquis in milling and baking quality. Many similar illustrations of breeding improved varieties could be given.

THE BULK METHOD.—The parents are selected and the initial cross is made in the same manner as in the pedigree method. During the second to perhaps the seventh generation the cross is grown by bulk planting, harvested in bulk and no selection made. At the end of this period most plants will be homozygous due to the self-pollination habit. The material now may be selected by the individual plant method as previously described.

THE BACKCROSSING METHOD.—This method was brought to the attention of plant breeders by Harlan and Pope (*Journal of Heredity*, 1932, 320-22, 1922). It consists of crossing two varieties and constantly backcrossing to one of the parents known as the recurring parent. It is especially advantageous as a method of adding one or two characters from an otherwise undesirable variety to a variety that is satisfactory in most respects. The variety with most characters of a desirable nature is used as the recurring parent as illustrated here.

1. Select parents

- A. A variety with desirable characters

- B. A variety with one or two important characters not carried by (A)

2. Backcross F_1 and succeeding generations to (A) selecting for characters of B.

3. Select in selfed progeny

In the absence of linkage and regardless of the number of character pairs involved the percentage of homozygosis in successive backcross generations for the characters of the recurring parent will be according to the progression $\frac{1}{2}$, $\frac{3}{4}$, $\frac{7}{8}$, $\frac{15}{16}$, $\frac{31}{32}$, etc. The percentage of homozygous plants for the n factors entering the cross only from the homozygous or recurring parent are dependent upon the number of generations of backcrossing and the number of factors involved. Richey presents a summary table for percentage of homozygous plants for the n factors in any backcross generation, (see American Naturalist 61: 430-449, 1927), calculated from the formula $\frac{(2^r - 1)^n}{2^{rn}}$, in

which r = the number of generations of backcrossing and n = the number of factors entering the cross only from the recurring parent. This brief description has been made to emphasize some of the more obvious advantages of the method. The method has been used by Briggs in California to add bunt resistance to California wheats without changing them appreciably in other respects. It has been used by Jones to produce a desirable muskmelon from a cross of a mildew resistant Indian variety with high quality susceptible varieties grown in the Imperial Valley in California.

Emsweller and Jones (*Hilgardia*, 1934, 197-211, 1934), emphasize the desirability of this method as a means of transferring rust resistance of an otherwise undesirable snapdragon to desirable flowering types without greatly affecting their other characters.

Hunter and Leake (*Recent Advances in Agricultural Plant Breeding*, 1934) give numerous illustrations of the production of improved varieties of self-fertilized crops by hybridization. A study of this summary will give the reader some idea of the extent to which modern genetical principles are being used by the trained plant breeder in the creation of improved forms.

Breeding Naturally Cross-Pollinated Plants

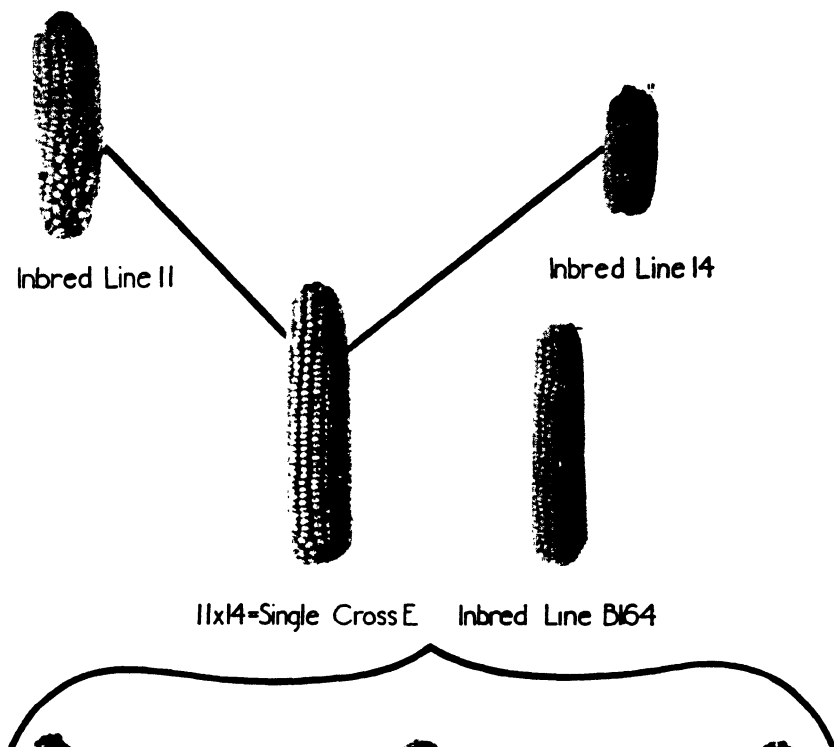
Breeding cross-pollinated plants is more difficult than self-pollinated plants because of the lack of homozygosity of characters and the impossibility of predicting the nature of the progeny of any particular selection. Much progress has been made in recent years which can be illustrated from specific examples.

Jones and others at the Wisconsin station have produced varieties of cabbage that are highly resistant to yellows through selection. In general they have found one or two generations of controlled self-pollination and selection desirable as a means of isolating highly resistant races. Continued self-pollination is not used as it leads to some reduction in vigor.

Cabbages are a mixture of self-sterile and self-fertile races and self-sterility is a result of slow pollen tube growth in stylar tissue carrying the same hereditary factor. Self-sterile races when pollinated in the bud stage are highly self-fertile due to the longer period of time for the pollen tube to reach the ovary. Pearson (*California Agr. Exp. Sta. Bul.* 532, 1932) has suggested a method of breeding for this type of plants. Self-sterile races will be bred by self-pollination and selection and then crossed to determine desirable combinations. What is needed is a cross that is fertile, highly productive, and of good quality. When any combination of two self-sterile lines is found to be desirable, the self-sterile races will then be bred continually by self-pollination in the bud stage and plants of the two types interplanted under seed production conditions for commercial seed production. All seed produced will be cross-pollinated and all plants from this cross-pollinated seed will be alike and highly productive. Crossed seed must be produced each year by interplanting the self-sterile races.

BREEDING CORN BY MODERN METHODS.—Modern developments in corn breeding are one of the best illustrations of the

STEPS IN THE PRODUCTION OF MINHYBRID 301



E x B164=THREE WAY CROSS MINHYBRID 301

MINHYBRID 301, A THREE-WAY CROSS, ADAPTED TO SOUTHERN MINNESOTA
A single cross of two inbred lines of Minn. No. 13, 11 X 14, is used as a female and crossed with an inbred line of Reid's, B164. The commercial hybrid, known as Minhybrid 301, exceeds normal corn in yielding ability by approximately 20 per cent and stands up better.

utilization of genetical principles in crop improvement:

1. The breeding of self-pollinated lines. Self-pollination is followed for the purpose of controlling both male and female heredity and to make controlled selection possible. Such self-pollination and selection isolates inbred lines that breed relatively true and that excel in important characters. Breeding methods for improving selfed lines are entirely comparable with those outlined already for self-pollinated plants. All inbred lines, however, so far obtained are less vigorous than normal corn varieties.

2. The determination of the better selfed lines and the specific use of certain lines in top crosses, single crosses, three-way crosses and double crosses. The plan now in general favor is to cross the better lines obtained by methods outlined under 1. with a standard variety and test the relative yield of these

tion. In a double cross, single crosses are used for both the male and female parents. These single crosses are very productive and for this reason hybrid seed can be obtained without too great expense.

Before using any particular single, three-way or double cross it is necessary to make a careful test to determine its value. Crossed or hybrid seed costs more and only high yielding hybrids that excel in other characters are of greater value than normal varieties. Hybrids have been obtained and are now available for some sections that are 25 per cent more valuable than any varieties now available. The use of hybrid seed compels the use of the crossing plot and makes it necessary for the farmer or other corn grower to purchase new seed each year as the later generations from a first cross lose a considerable part of their vigor.

H. K. H.

Lines that yield or perform satisfactorily in top crosses are selected for further use in breeding. Lines producing undesirable combinations are discarded. The better inbred lines are tested finally for use in single crosses, three-way crosses, and double crosses.

A single cross results from combining two selfed lines and in order for this to be profitable the inbred lines themselves must be rather vigorous. Single crosses in sweet corn for canning purposes, where uniformity of type and maturity are so important, are now being grown rather extensively.

The reason for using three-way and double crosses is much the same. Seed production of a three-way cross is obtained by using a single cross as a female parent. This single cross is planted alternately with an inbred line, 2 rows of the female to one row each of an inbred line used as the pollen parent, and all plants of the female parent are detasseled as soon as the tassels appear. Seed produced on the detasseled parent will be cross-pollinated and such seed sold for commercial corn produc-

LORD (1788-1824). The erotic aspects of Byron's personality attracted great interest during his lifetime, an interest which the passing of more than a hundred years has not extinguished. In fact it is possible to say that while his poetry has suffered something of an eclipse, his rebellious career continues a spectacular landmark in English biography. Scholarship has now amassed a formidable bulk of material about each small facet of his existence, with the result that many problems have been satisfactorily solved. In the sexual field, however, there still remains considerable doubt about important questions. Fact has lagged far behind conjecture.

That Lord Byron received great attention from women is in no way surprising, for he was ideally suited to the rôle of the great lover. It was not merely that he was handsome in a spectacular fashion; he was likewise immensely appealing physically because of his imperfect foot, which created sympathy rather than revulsion. To his

appearance he added an undeniable social charm, reinforced by his birthright in the British peerage. Still further, he was a talented poet of a dashing, Satanic, ardent yet melancholy cast, when such qualities were highly prized by the educated public not merely of England but on the Continent as well. Beyond these things, he maintained a masculine fire and wit, commanding from men a response that was tripled by women.

His susceptibility to the interest of women was no less inevitable. Even his inheritance seems to have committed him to the rôle of the emotional athlete. From both sides of his family he could have acquired nervous instability. In his own case it appears to have amounted to incipient epilepsy. His boyhood was psychologically turbulent because of the terrible outbursts between his parents, ending in the father's desertion of the family, to which he subsequently contributed nothing save debts and worry. Mrs. Byron was liable to spasms of temper, in the course of which she abused her crippled son, only to dote upon him in the periods of remorse that followed. We know from Byron's own testimony that he experienced the fierce hate of the son who takes sides with a mother against a father, a condition that leads to psychological trouble when the son seeks to assume for himself the rôle of husband and parent in his mature years.

Even before adolescence, Byron formed violent attachments. Mary Duff, a pretty cousin, and Margaret Parker, another cousin whom he called "one of the most beautiful of evanescent things," aroused infatuations of neurotic intensity. They were followed by Mary Chatworth, with whom Byron, a school boy at Harrow, was deeply in love. Miss Chatworth, who was older than Byron, failed to see in the lame, rather stout youth, the future *vainqueur du vainqueur de la terre*. She pretended to treat him as a brother. Still worse, he was unlucky enough to over-

hear the girl say to her maid: "Do you think I could care anything for that lame boy?" He kept secret from her the deadly blow to his pride, but the accidental insult was deep driven. It seems surely to have formed a part of the neurosis exhibited by Byron when, hearing of the marriage of Mary Duff, he came near an epileptic seizure. He was never able to regard Miss Chatworth's marriage with indifference. On the contrary there is evidence to indicate that Byron carried over into the numerous conquests of his mature life a latent resentment of the slights he felt himself to have suffered at the hands of his youthful loves who, after all, did not marry him, wait for him, nor remain permanently single for his sake.

A series of notorious affairs followed Byron's sudden rise to international literary fame. We know the details through his frank letters to *confidantes* and through records of his own very open talk. These intrigues followed one another in wearying succession, and they were not interrupted by Byron's one year of married life. In several instances they were not of his seeking. Much the same thing appears to have been true of his marriage, according to some entered into for the sake of Miss Milbanke's money, according to others, entered into by capricious impulse. It was the gossip occasioned by Lady Byron's formal request for a separation agreement that gave rise to the great scandal of Lord Byron's life.

Biographical authorities are still at variance over the question of Byron's relations with his half-sister. The known facts are sufficiently ambiguous to allow both sides what they think to be overwhelming proof. In most cases the investigators appear to take sides through the influence of temperament. About the alleged facts, however, there is no dispute. They assert that Byron was guilty of prolonged incest with Augusta Leigh and that the relationship resulted in the birth of Mrs. Leigh's fourth child, Medora. Belief in this accusation by English society at the

time made Byron a social outcast almost over night and was partly responsible for his permanent departure from England.

Modern psychology supplies considerable theoretical support to the insufficient facts. It can be reasoned that Byron was not without motivation for an incestuous relationship and that the circumstances were favorable. Augusta Leigh attracted him physically. He was thrown with her for what was only the second time in his life. Hence there was no chance, as André Maurois points out, for the wear and tear familiarity that usually exists between brother and sister to break down a potential sexual bond. Byron was bored by his marriage, and he was weary of his more conventional conquests. The dangerous adventure of incest, offering the thrill of great trespass, was sure to appeal to the insolent rebel in Lord Byron, who now had reason to think of himself as one of the most brilliant, irresistible, and above all most unconventional men in the world.

As if these things were not enough, Byron had the promptings of his neurotic mind in which the incestuous tendencies of the normal child had been strengthened by his unwise mother and by his love for his cousins, balked by circumstance from having their ultimate expression in actual sexual union. The frustration of those loves might also be considered. Finally, there is reason to think that Augusta herself was ill-fitted to resist conduct even of the kind she feared and on principle abhorred. Her contemporaries judged her flighty and superficially minded, a combination which rendered her capable of conduct entirely opposed to her sincerely professed morals. That Byron was interested in the theme of incest is plain from his rather elaborate treatment of it in more than one of his works.

Such is the picture drawn by recent biographers. If one confines himself exclusively to documentary evidence, the charge of incest is possible. If the line of reasoning taken by psychology

be accepted, the charge is more than possible, it is probable. In no case, however, would it be fair to assert the case as proved. Lord Lovelace, himself largely responsible for what the world now suspects about Byron and his sister, has this to say about his grandfather: "Those who have access to the best information are sure of nothing in the character of Lord Byron."

During his prolonged residence on the Continent, Byron entered into two relationships which demand mention. The first, begun before he left England, was with Clare Clairmont, the sister of Mary Godwin. Byron treated Miss Clairmont badly, seeming to despise her for her shameless pursuit of him. He expressed his dislike for her openly, although he tolerated an intimacy which resulted in an illegitimate daughter, Allegra, of whom he was genuinely fond. The second liaison, and the last of any note, was with the Countess Teresa Quiccioli. It appeared that at one time he was even willing to marry the Countess had her husband and his wife been willing to grant the necessary divorces. As it was, he remained her outwardly devoted cavalier for five years, parting from her only upon his decision to offer his services in behalf of Greek independence. They never met again.

Byron's poetry reflects his attitude toward love and toward women because he was always the hero of his own creations. Through them we see Byron as a Don Juan, a charming and irresponsible libertine; as a Manfred, lost in Satanic, incestuous dreams of superhuman existence, where the daring soul is utterly its own master; as a Conrad, evil but compelling; or even as a melancholy lyricist, singing in poignant verse of intense feeling faithfully expressed.

Byron's complex nature contained all these elements and more too, including those of a reflective, witty, even generous man, capable of vigorous thought and of self-forgetful emotion. Too much emphasis, attracted by the scandals of his brief life, has probably come

to rest upon the Byron who, in life and in letters, was either a cynic *malgré lui* or a rebel nomad, steeped in unassuageable melancholy or wrung by deep, hopeless yearning for a freedom that was beyond the scope of his destiny.

Albert Brecknock, *Byron; a Study of the Poet in the Light of New Discoveries* (1926); John Holland Cassity, *Psychopathological Glimpses of Lord Byron* (Psychoanalytic Review, 1925, pp. 397-413); Augustine Filon, *Le Crime de Lord Byron* (Revue des Deux Mondes, 1912, Serie, 6, Tome 7, pp. 387-418); Francis Henry Gribble, *The Love Affairs of Lord Byron* (1910); André Maurois, *Byron* (1930); Ethel Mayne, *C. Byron* (1924); J. D. Symon, *Byron in Perspective* (1924); Ralph Gordon Lovelace, *Astarte* (1921).

W. M. H.

CARLILE, RICHARD (1790-1843), English social reformer, freethought publisher and free-press agitator, is best known as a birth control pioneer,



and, as a disciple of Francis Place, as the author of *Every Woman's Book; or What is Love?*, the first tract in the English language exclusively devoted to the medical, social and economic aspects of contraception.

Place "educated" Carlile in Neo-Malthusianism while the latter was incarcerated in Dorchester Gaol for having published deistical opinions in

his remarkable *Republican*. Carlile was at first shocked; but, under the persuasive influence of Place, he not only accepted the latter's point of view, but soon got out of hand and published passages in *Every Woman's Book* which Place did not approve. The publication of *Every Woman's Book* caused some protest, but not an enormous amount of public discussion, and was never prosecuted. Authentic editions of *Every Woman's Book*, and more especially the abridgement by Godfrey Higgins, English freethought writer, magistrate and reformer of conditions in insane asylums, are rare.

Carlile considered many of the arguments for and against birth control now commonly heard; and mentioned as methods *coitus interruptus*, the sponge, (Place's favored method) and tampons and plugs of various kinds.

Carlile's efforts in behalf of the liberation of the English press were, if not unique, enduring. Despite the fact that he was in prison for more than nine years for publishing his republican and deistical opinions, the persecution by an ultra-conservative government never broke his spirit. As Place had educated him, Jeremy Bentham, the great law reformer, befriended and counselled him on legal matters. The name of Richard Carlile will ever hold a conspicuous place in the history of man's struggle to control his fertility.

W. H. Wickwar, *The Struggle for the Freedom of the Press* (1928); George Jacob Holyoake, *The Life and Character of Richard Carlile* (1843); Theophila C. Campbell, *The Battle of the Press*; Norman E. Himes, *Medical History of Contraception* (Baltimore, 1936).

N. E. H.

CASANOVA, GIOVANNI JACOPO (GIACOMO), DE SEINGALT (1725-1798). The name Casanova has long since taken its place beside that of Don Juan as a synonym for rakish adventurer; but where Don Juan remains a legend, with the dimensions of a folk-myth, Casanova de Seingalt was a flesh-and-blood personage, well known to the leading figures of the brilliant eighteenth century; and he has, moreover,

left behind him a volume of *Memoirs* of considerable historical importance and high literary quality, a work which—an advantage that the resplendently somber Don Juan myth does not possess—is in a fair way to being the Bible of the professional lady-killer.

The best source for Casanova's life is his own writings, that is to say, his *Memoirs*. It is true, we do not, and shall not for some years, perhaps, possess a text of the *Memoirs* which we can be sure is anything like a definitive one. The first 12-volume edition appeared at Leipzig during the years 1826–38, and other editions have been published since; but it is known that these do not reproduce the text of the original manuscript, owned by Brockhaus of Leipzig, who for years has had a critical edition in preparation. In addition to the *Memoirs*, there is a collection of letters from women to Casanova; and this, with the biographical contributions of Rava, just about constitutes the amazingly small Casanova bibliography that is deserving of the name.

Casanova's life, as, with the data at our present disposal, we are able to make it out, was one filled from first to last with the most astonishing and theatric ups and downs. It was a true worldly adventurer's life, with the hero alternately appearing as priest and gambler, cardinal and confidence-man, plotting court-favorite and lowest-dungeon prisoner; while over it all there hangs the indefinable charm of a scintillant personality, a personality that stood out vividly against the background of an age that specialized in charm and brilliancy—the age of Voltaire and Madame de Pompadour and all the others.

Aside from the inimitable atmosphere in which these *Memoirs* are suffused, there is the curious ethical code they reveal, the strange admixture of integrity and unscrupulousness, affording a study in psychology to be set beside the problem provided us by an Hérault des Séchelles or a Stendhal.

It is, not inappropriately, on the his-

trionic note that the great philanderer's biography begins, when we learn that he came of a family of actors. For there clings to the rake, always, something of the theatre, a reflection of the footlights' artificial glow that he is never able quite to shake off. Giovanni Jacopo, however, was educated, not for the stage, but for the priesthood, at Padua. This was not a career for which he was adapted, skeptical sensualist that he was; although his deep insight into human nature might have stood him in good stead in the confessional.

Displaying a precocity that drew attention upon him, the youthful Giovanni began as a boy preacher in Venice, and, rising rapidly in papal favor, soon became the Cardinal Acquaviva. This favor was short-lived; for one of Casanova's outstanding traits was his propensity for quarreling. And so, he threw the priesthood over; he would become a soldier. His military career was scarcely more successful than his sacerdotal one had been; and it was not long before he was in dire want and earning his living as a violin-player in a tavern.

Later on, Casanova was to achieve an income through his noble connections; but it was not until his last years that he had anything like assured prospects. In the meanwhile, he wandered from capital to capital, getting as far as Constantinople, and all the time carrying on—if we are to credit his *Memoirs* as they stand—his incredible series of boudoir adventures. He contrived to know everyone who was worth knowing in the Europe of the day, including Voltaire and the Pompadour. Upon occasion, he played the political-diplomatic game, and we find him acting as agent, now for Louis XV, and now for the Republic of Venice. One moment, he might be fêted by the Empress Catherine, and the next, he would be languishing in a lower-class prison. The last years of his life were passed, tranquilly enough, at Dux, in Bohemia, as secretary to the Duke of Waldstein.

The truthfulness of the *Memoirs* has frequently been brought into question. The last word in Casanovan scholarship has not been said, and cannot be until we have the Brockhaus text. But whether the present text is accurate or not, it in any event throws much light upon the period and, as has been said, is possessed of literary grace. Such revisions as we may in the future be called upon to make will, it is likely, have primarily to do with Casanova the man—the character of the man, which has been the subject of so much controversy.

The tendency of recent criticism is to treat Casanova much more leniently as a man. We are now aware that no individual ethical code is to be considered apart from the ethos of the age that produced it; and, thanks, perhaps, to the nineteenth-century Stendhal, we are beginning to understand better an era that gave birth to a Seingalt. As pointed out in another article in this work (see LITERATURE AND LOVE), the prevailing quality of the *Memoirs* is their *tristesse*, their peculiarly Mediterranean sadness, something of the same sadness, though less wide in scope, that is to be met with in the legendary person of Don Juan—the sadness inevitably inherent in the rake's progress, if the rake be a sensitive individual.

For the *Mémoires*, in addition to the 12-volume Leipzig edition, 1826-38, there are the ones by Rosez, at Brussels, 1860-63, and by Garnier, Paris, 1879-80. For the letters of women to Casanova, see *Lettere di donne a G. Casanova*, ed. A. Rava, Milan, 1912; also, *G. Casanovas Briefwechsel*, ed. Rava and Gugitz. For biography: Rava, *Contributo alla biografia di G. Casanova*, Turin, 1909-10. On Casanova's old age: Arthur Symonds, *Casanova at Dux* (North American Review, 1902). For Casanova against the background of his age: Maynial, *Casanova et son temps*, Paris, 1911. See, also: Molmenti, *Cartezzi Casanoviani*, Florence, 1911. There is an English translation of the *Mémoires* by Villars, London, 1892.

S. P.

CATHERINE II (1729-1796). The life of Catherine the Great of Russia has always been a subject of popular interest. A contemporary of Frederick the Great, of Maria Theresa, and of

Louis XV, she belonged to an age of illustrious monarchs whose countries were but the background of their personal activities. As the most human of this group, she has always had a strong popular appeal.

Catherine the Great was born in Stettin, Germany, of noble but unprosperous parents. Sophie Auguste Friedrike, shortened to the childish name of "Fi-ke," was her baptismal name and remained such until she was re-baptised as Catherine Alexeievna on her arrival in Russia. Born May 2, 1729, she grew up to the age of fourteen in the small North German garrison town, of which her father was military governor. Her mother, much younger than her father, was the ruling spirit of the household.

The Princess of Alhalt-Zerbst, as she was entitled, was from the first carefully educated. Besides a French governess, she had as her tutor a Lutheran pastor. She had other tutors as well, but the chief influences were the governess and the pastor. Babet Cardel and Pastor Wagner guided the child's life between them. She learned easily and was the pride of her teachers. Her mother, who had been disappointed because her eldest was not a boy, paid her but little attention, thus arousing in the child's heart a resentment that was slow to die out. She was nevertheless obedient as a rule to her mother and to her teachers as well.

When Princess Sophie was but fourteen, her hand was asked in marriage. The Empress of Russia, in casting about for a wife for her nephew and heir, had fixed upon the young princess living in Stettin. Sophie had nothing to do with the decision. Her father demurred but her mother was eager to accept and her will prevailed. Straight from the hands of her governess and tutors, she was hurried away to Russia to be married to an unknown consort. In the process, she was required to change her name, to adopt a new religion, and to cut herself off from her family. She was then wedded to an immature and perverse youth incapable

of being a husband. Young as she was, Catherine felt to the full all the shock and sorrow and humiliation of this experience.

After nine years of marriage with the Grand Duke, Catherine was still a virgin. Her health was wretched; she and her husband had become bitter enemies, and the Russian Empress had turned her back on them both. The one fruit of these trying years was that she had learned to occupy her solitude with books. She had taken for her example the philosophers of France and strove to imitate them by becoming a philosopher herself. It was a high ambition and one which she never laid aside through all her varied and tumultuous career.

Knowing how matters stood, one of her ladies persuaded her to take a lover in order to produce an heir to the throne. Sergei Saltikov, a Russian youth of similar age and good descent, became the father of her son Paul and the progenitor of the future Romanov line. Forsaken by her lover, Catherine turned her attention once more to books and extended her interest also to politics and the cultivation of friends. Her position in Russia was as secure as the birth of the heir could make it.

Meantime her relations with Grand Duke Peter had not improved. He felt his humiliation as a cuckold as deeply as she had felt her neglect as a bride. They continued to be bitter enemies. This enmity combined with the declining health of the Empress created an alarming situation for Catherine. But she bided her time in silence, depending on her own resourcefulness and a group of sworn friends. When the Grand Duke Peter had been Czar for six months, she headed a revolution and seized the crown for herself. Peter died suddenly in prison. Catherine issued an official statement that he had died of natural causes. This was not generally believed though nothing to the contrary was known. Not until after her death was a confession found among her papers signed by the man who had killed him. Alexei Orlov, the brother of

Gregory, and one other had done the deed. The tone of the confession showed that he had greatly feared Catherine's anger. Catherine nevertheless shielded him at her own cost by keeping the secret as long as she lived. At the age of thirty-three, the little German princess from Stettin was crowned Empress Catherine II of Russia in Moscow. Her coronation was one of the most brilliant that the ancient Russian city had ever seen. It ushered in a reign of splendid achievements. Her building activities outstripped those of any ruler before her except Peter the Great. In foreign relations she made history, expanding the boundaries of Russia and changing the map of Europe. Letters, histories, memoirs, plays, children's stories flowed copiously from her pen. Her domestic reforms included an attempt to free the serfs, which ended however in complete failure. But it was in the course of this attempt that she earned for herself the title of Catherine the Great.

After she had become Empress, Catherine was never without a lover. It was one of her grandsons who called her "the greatest whore in Europe," and she herself who said, "The trouble is that my heart would not willingly be one hour without love." Before she had become Empress, she had had as lovers Saltikov, Poniatovsky, and Orlov. Her relation with Orlov continued for ten years after she had ascended the throne. When it ended, she had Vassilechikov in his place for a time, but he was quickly supplanted by Potemkin. Potemkin remained her bed-fellow for two years and her less intimate lover for fifteen years. Her relation with him was most peculiar. His restless spirit could not tolerate the strict régime of a favorite, yet he was afraid to go away lest his mistress should forget him. Sure enough, while he was campaigning in the Turkish Wars, Catherine was constantly admitting other men to his place—Zavadovsky, Zoritch, Korsakov, Lanskoj, Yermalov, and Mamanov—and Potemkin was as constantly returning from the front to drive them out. Preceded by mutterings and threatenings, he

would suddenly appear at court one day and the next day the new favorite would go.

Finally Catherine suffered a great shock. Mamanov, her new favorite, married. Without telling her and without waiting for Potemkin to come home and oust him, he fell in love with a lady of the court and married her. The next favorite that Catherine chose was Plato Zubov. When Potemkin came home in the usual way to displace him, Catherine stood firm on his side and would not let him go. This brought the final break in her relations with Potemkin. He died soon afterwards and Catherine continued to live with young Zubov for the last years of her life.

Catherine the Great had five children. Paul, the son of Sergei Saltikov and heir to the throne, was the first child. The second was a daughter, the child of Poniatovsky, and died in infancy. Another son, for whom she invented the surname of Bobrinsky, was the child of Gregory Orlov. She also had two daughters by Orlov, but they have left no discoverable traces. The Grand Duke Paul grew up and married a German princess, who was everything that Catherine the Great was not, and had by her a large family of children. Bobrinsky also grew up and, after sowing his wild oats rather plentifully, married and founded a stable family.

Though Catherine the Great had children, she never knew the experience of being a mother. Her children were either taken away from her and brought up by Empress Elisabeth or placed out by herself in foster homes as illegitimate. It was not until her two eldest grandsons were born that she had her first experience of motherhood. Unconsciously following the pattern set by Empress Elisabeth, she took the two little boys into her household and brought them up as her own. She took care of them personally—feeding them, sewing for them, and writing children's stories for them.

A large part of Catherine's later life was taken up with wars. It was her grand dream

to Christianize Europe by driving out the Turks. This was a medieval dream in which western Europe was no longer interested, especially as Catherine expected thereby to extend Russia to the Black Sea. She forsook her former astute diplomacy and resorted to aggressive warfare. She launched a great fleet and sent large armies into the field. To her dismay she found this plan of action terribly expensive. "To make war," she said, "three things are necessary: money; money; and money." She found too that western Europe not only failed to appreciate her aims but tried to thwart them. Aided by France and Great Britain, the Turks offered a far stronger resistance than she had expected, and her wars were prolonged through desperate and costly campaigns. Her plan to take Constantinople and restore the Greek empire under the protection of Russia failed. France and England succeeded in preventing this, though they had not acted in time to keep her from taking the Crimea. The dream, with all its terrible setbacks and penalties, was the grandiose aim which united her life with Potemkin's for so many years.

Towards the end, Catherine seemed to have lost all her greatness. Plato Zubov, the young favorite, had no understanding of the great tasks which had formerly engaged her. He was a typical parasite, vain and luxurious, who brought her court into disrepute. His one common enterprise with her, the attempt to marry her granddaughter to the King of Sweden, ended in a fiasco horribly wounding to her pride. Still Zubov, the handsome and dashing, was faithful for five years and this was a triumph for a woman in her sixties. Her health failed badly before the end but she continued active, sociable, and merry to the day of her death. She died November 7, 1796.

It is difficult to give an unromantic account of Catherine's love life because tradition and popular belief have always preferred to view it otherwise. Also, while we know a great deal about her, we know very little about her lovers. But it is worth while to divest the subject of its glamour and add such facts as we do know about her lovers in order to illumine this side of her highly-organized personality.

Catherine's first lover is one who has been commonly overlooked. She says but little about him in her memoirs,

perhaps because she remembered but little. When she was fourteen, her mother's brother, aged twenty-four, made love to her in corners, kissing and embracing her passionately and asking her to marry him. Catherine said she would if her parents would consent. Her uncle took no steps towards gaining their consent but increased his passionate love-making. He then went away, after making Catherine promise not to forget him.

Her marriage with Grand Duke Peter followed almost immediately. The union had the fault common in such matings, being a forced and premature arrangement dictated by the elders. Catherine was physically well-developed, but she was not emotionally ready for marriage. A healthy physical lover might have counteracted the sentimental impression made by her uncle, for she was still very young. But Peter was backward physically as well as emotionally. They were widely separated entities from the start.

Thrown at each other's heads as they were with no possible tie to unite them, they soon learned to hate each other. With her stronger character and better upbringing, Catherine was able to control this feeling; but Peter's hatred grew until it overwhelmed him. The events of their marriage bed tell the whole story. Peter played nightly with toy soldiers on the coverlet and Catherine, to please him, played with him. He varied the entertainment sometimes by confiding to her his admiration for other women, and Catherine, again to please him, listened. Her patience gave out one night and in order not to listen she pretended to be asleep. At this Peter attacked her with his fists and gave her a beating in bed.

Later, during a quarrel in her boudoir, he threatened her with his sword and she replied with a half-threat that she also would use one. During her second confinement, Peter entered her room in military uniform and brandished a dagger, declaring that he had come to defend her against an imaginary enemy.

Catherine not only did not love Peter; she hated him and feared him, and with good reason.

Thus, during her adolescence, Catherine had been unsuccessful in love twice over, the second time tragically. She was too young and inexperienced to realize Peter's physical deficiency; it was his neglect of her, its openness and long continuance, which counted. Her third attempt fared little better. Though she accepted Saltikov as the father of her child on the advice of others, she fell in love with him and suffered keenly when he proved unfaithful. After this disappointment, she lived in chastity for three years.

It was a new Catherine who entered the relationship with Stanislas Poniatovsky. She had grown to realize her own cleverness and ability by comparison with the people around her, and to trade on it, perhaps too consciously. She was no longer the obedient young woman who took suggestions from her attendant ladies; she was the skilful ruler of her own household. According to Poniatovsky, she was dazzlingly beautiful at the time. Her intimacy with him developed on a different footing from her earlier relationship. It was her first gallantry.

A few years later, with Gregory Orlov, she displayed a similar spirit. Romantic stories about Orlov's bravery in love and war had attracted her attention before she wooed him surreptitiously. Later still it was she who summoned Potemkin to her boudoir, though his great ardor made it appear otherwise. All of her other favorites were openly chosen and courted by herself. Much of this aggressiveness developed after she had become Empress and mistress of her universe. But it had its beginning in earlier years and was based on sure self-knowledge and an objective appreciation of her abilities and resources. The traits which were manifested in her sex-life were the same traits which led her to seize the crown.

Her favorites were not inferior men. She liked them to be tall and fine-looking

and to appear well in an army uniform. With practically no exceptions they satisfied these requirements. Some of them were individuals with superior qualities. Even Peter, her husband, was never the imbecile painted. It was Russian propaganda which after his death labeled him "monster" and the name stuck. But if Peter had been an idiot, Catherine would never have taken him as seriously as she did; nor would she have attributed his failings, as she did in her memoirs, entirely to his bad education.

Sergei Saltikov, her first lover, was the type of young Russian nobleman who was sent on missions to foreign courts. Poniatovsky, her second, was strikingly handsome, cultured, and a royal personage. Orlov did not belong to a noble family, but it was a family renowned for heroism. His many portraits in Russian galleries represent him as having been truly magnificent in appearance. Vassilchikov was a stop-gap and did not count. It was perhaps his resentment of this fact which caused him to tell tales out of the Empress's boudoir; he was the only one of her lovers who did this. Zavadovsky was her secretary and afterwards became a minister in her grandson's cabinet. Lanskoj, an artist, was her spiritual comrade and the companion of her dreams. Her relations with Lanskoj are said to have been entirely platonic and when he died she mourned for him in solitude for a year. Zoritch was the only one of her favorites who was notably uneducated. Of Yermalov we know little except his blond good looks.

Potemkin was a logical choice as an early comrade of the Orlovs and a party to the conspiracy which had helped her to seize the throne. His true qualities have been almost lost in the extravagant portrait painted by French propagandists on behalf of their allies, the Turks. It is difficult to believe that he was half the barbarian which skilful French publicity made the world think. Potemkin was a dreamer and poet, a writer of plays and a master of pageantry, a famous host, a chivalrous lover, and a

well-known general. Zubov's failings were partly the wilfulness of youth and he was withal a courtier. Altogether the men with whom Catherine lived in longer or shorter periods of intimacy were fair proof of her poise and good taste.

It is undeniable, however, that they all deteriorated in her hands; those who stayed longest, the most. Everyone deteriorates under ease and luxury without responsibility and this was their essential case. They were showered with gifts and emoluments, with privileges for their families, with rich but empty honors and rewards. Catherine lavished her thwarted maternal feelings upon them. They were treated like children. If she allowed them to go away as ambassadors or generals, she continued to hold the strings to their actions. When her protection was finally withdrawn as the result of a sexual crisis, they went down all in a heap and passed on to a more or less tragical end. This was true at least of the three whose lives were most closely linked with her own; Peter was killed, Orlov went insane, and Potemkin died in desperation and exile.

Catherine the Great never learned to love. Nor was she ever loved in return. With all her Don Juanism, she was, as an astute observer of her time said, "a stranger to love." On the other hand she was marked by a strong sexuality which persisted to the end. It required satisfaction by ever younger and younger lovers, until she took them at last from the contemporaries of her own grandsons. It was her over-compensation for too much early denial.

One curious feature of her emotional life was her partiality for men in pairs. Besides her lover there was usually a second and sometimes a third man with whom she was equally confidential. With Poniatovsky, for instance, was associated his close friend, the Englishman, Williams, who was also in love with her. Alexei Orlov knew the way to her bedroom as well as his brother Gregory, though there are no indications that Alexei ever had sexual relations with

her. Potemkin's replacement by other favorites during his absence was a similar arrangement; her sexual relations were with the substitute, her emotional relations being primarily with Potemkin. When Zubov came, he brought two brothers who shared her confidence with him. These secondary male friends took the place of women friends who were so noticeably lacking from her life. She commented in her memoirs on this absence of women friends without trying to explain it. Another curious fact about her was that the two men simultaneously preferred usually could and did remain the best of friends. Of course, none of her favorites was permanent.

In spite of her humanness, it is a far cry from most lives to such a life as that of Catherine the Great. Rarely is an individual placed in so many impossible life-situations. There is no question of regarding her conduct as an example; the majority of people are never required to face such extraordinary problems. There is equally as little need for praise or blame in one's attitude toward so unusual a character. One can only put away prejudice and bring insight to bear on such a life; thus one carries away from it an increased appreciation of the complexity of human personality and a keener view of the influences which produce it.

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K. A.

CATHOLIC CHURCH AND SEX PROBLEMS.

1. THE CONFESSIONAL.
2. SEX INSTRUCTION.
3. THE THEATRE.
4. PROHIBITED BOOKS.
5. TRAINING OF THE WILL.
6. CONSANGUINITY.
7. BIRTH CONTROL.

Almost needless to say, the Church has had long experience with this subject of sex. For over nineteen hundred years now, thoughtful churchmen have been engaged in the serious study of it with the one idea of being helpful to penitents in their advice with regard to it. Many in our time seem quite persuaded that proper attention has been paid to sex only in our generation. Not a few of them are ready to declare that a policy of silence with regard to sexual matters has been dictated by the Church and that this has been very unfortunate because the keeping of knowledge away from young folks particularly has worked an immense amount of harm. Not a few educated people are quite sure that churchmen consider that ignorance in this matter fosters innocence and that the less that is known about sex the better for all concerned.

The Church has, however, always recognized the necessity for appropriate knowledge on this subject, though always ready to declare very emphatically that the giving of more knowledge than is absolutely necessary to satisfy the curiosity of growing young folks so as to appease the legitimate inquisitiveness that has been aroused would surely do ever so much more harm than good.

The Confessional.—The Roman Catholic Church through its confessors is asked to guide the consciences of its members. Those who belong to the Church go to Confession regularly. They are all bound to go at least once a year, or by the very fact of omitting the annual reception of the sacrament they incur the sin of violating a Church commandment. The majority of those who belong to the Church go to

Confession at least once a month. A great many go once a week. The confessor may be a stranger to them, but as a rule they know him familiarly, they tell their faults to him quite frankly, and receive absolution for them in accordance with the words of Christ: "Whose sins you shall forgive they are forgiven them; whose sins you shall retain they are retained."

With human nature what it is, the subject of sex is sure to come up in many confessions. In order that there may be uniformity of instruction, the Church authorities, after consultation with leading professors and writers in the field of ethics, issue documents which are guides to pastors and confessors in their work of helping penitents solve the difficult problems of life that surround them. When the subjects are very important the Pope himself issues documents, encyclicals or briefs, with regard to them. Pastoral letters written by the bishops are issued for the instruction of priests and laity in special subjects that arise from time to time. Besides these means of maintaining uniformity of instruction on ethical questions, all priests take courses in moral theology (ethics).

In the confessional the laws of the Church with regard to sexual sins are explained by the confessor and directions given as to conduct. Unless the penitent is sorry for his faults and resolved not to repeat them, absolution is not given. There are many subjects besides sex that come up for consideration in the confessional. The whole range of human conduct requires guidance and this is given by the confessor.

Sex Instruction.—The Church is strongly opposed to class teaching of sex subjects, that is to the imparting of sex information to groups. Theologians are definitely of the opinion that it does harm rather than good. Co-educational or promiscuous teaching of sex subjects is considered utterly out of the question. Sex education when carried on in groups is almost sure to lead to prurience and to awaken more curiosity than

it satisfies. It inevitably prompts discussion of various questions relating to sex before the young have any principles to guide them in the matter.

Professor Hugo Münsterberg of Harvard, the well-known psychologist so prominent especially in educational circles in the years before the Great War, whose psychological treatment of various social questions brought him many invitations to read papers before scientific societies, shared this opinion of the Catholic theologians and expressed it very emphatically in terms that leave no room for hesitancy as to his meaning:

"The cleanest boy and girl cannot give theoretic attention to thoughts concerning sexuality without the whole mechanism for reinforcement automatically entering into action. We may instruct with the best intention to suppress and yet our instruction itself must become a source of stimulation which unnecessarily creates the desire for improper conduct. The policy of silence (so long pursued by thoughtful people) showed an instinctive understanding of this fundamental situation. Even if that traditional policy had had no positive purpose, its negative function, its leaving at rest the explosive sexual system of youth, must be acknowledged as one of those wonderful instinctive procedures by which society protects itself."

One of the objections to the Catholic Church that has been urged over and over again in recent years has been that the Church cultivated a policy of silence with regard to sexual subjects. Only a little knowledge of religious controversy during the past four centuries, that is since the religious revolt in Germany, is required to know that over and over again the Church has been accused of exactly the opposite, that is of paying too much attention to sex subjects. Moral theologians discussed sexual problems in their treatises and lectures in a way that Protestants declared to represent an undue and unholy interest in sex subjects. On a number of occasions there was quite a scandal about it.

This careful discussion of sex subjects by moral theologians was needed to determine just what actions or practices represent serious transgressions of the moral code. Students of theology in seminaries where young men are educated for the priesthood still continue to study these subjects with careful at-

tention. The most delicate casuistry is needed to determine just what is and what is not sinful in these problems. The Church remains the same but the attitude of people changes from time to time. They blame the Church in one generation for being too reticent with regard to sex and in another generation when puritanic feelings abound for not being reticent enough.

About a generation ago there was a bitter denunciation of the Church in Boston for its teaching on sex subjects to children. The catechism, that is the abbreviation of Christian doctrine which is placed in the hands of all young folks when they reach the age of reason—usually considered to be about the age of seven years—contains questions and answers which explain the meaning of the Commandments, that is of the Mosaic code of laws. For instance it is explained that by the Sixth Commandment (this is what Protestants call the Seventh Commandment) is forbidden adultery but also “all other kinds of immodesty such as immodest kisses, touches, looks, words or actions.” In explanation of the Ninth Commandment, “Thou shalt not covet thy neighbor’s wife,” “all lustful thoughts and desires and all wilful pleasures in the irregular motions of concupiscence” are forbidden.

The Protestant condemnation of this teaching was: “Do not questions like the foregoing asked of children less than fourteen in the schools and multiplied a hundredfold by the priests in the confessional lead to lust!” Many more bitter comments than this were made and the Church was declared to be a very hotbed of licentiousness just because it was trying to introduce children gradually and safely to these thorny subjects relating to sex.

Here once more the Church’s attitude has always remained the same from the beginning of Christianity. Children have been taught their catechism which contains the truths of their religion from their very early years. They do not understand the long words which

occur in the questions and answers when they are first taught them, but as they advance in years and knowledge they learn their significance gradually or they are tempted to ask questions of their parents or teachers or confessors couched in the terms they have learned. Their mental development becomes the standard by which their desire for knowledge can be properly satisfied. Their questions are answered quite frankly though simply but under such circumstances as lead to very little incitement to prurency.

Children are supposed to learn a good deal about life and its mysteries and problems from their experience in the family where the birth of successive children leads the older members gradually to understand a great deal about these matters. Out in the country the presence of the animals and generation among them teaches children safely yet fully even at very early years all that they need to know and certainly all that will satisfy their budding curiosity on these subjects.

The Church’s teaching on subjects related to sex has always been straightforward and consistent with itself. It was part of the early tradition and was put in definite form by the Fathers of the Church in the fourth and fifth centuries. Paul had spoken with regard to it and Christ Himself used some very striking expressions with regard to it. All of the evangelists have something to say on the subject.

Nothing could be more untrue than the presumption that this is the first time in the history of humanity that problems of sex have come up for serious consideration. Even the Church in the earliest days of Christianity was not a pioneer in the matter, though the teaching of Christ gave it a definiteness that had not been achieved before. For as long almost as the history of mankind runs sensible men have recognized the importance, if not the absolute necessity, for imparting information with regard to sex, but that information must not be more than is needed under

the circumstances. Children of different ages are very different in this regard, and it is the individual condition of mind that must be considered. There must be no hasty generalization and no presentation in mixed classes, or to children of very different ages.

An excellent illustration of the careful teaching of wise men with regard to sex is to be found in a paragraph of what is sometimes known as the oldest book in the world. The title of it is "The Instruction (or the Proverbs) of Ptah-Hotep." Ptah-Hotep was the vizier of King Itosi in the fifth dynasty in Egypt who lived sometime not long before 3,000 B. C., very probably a little more than five thousand years ago. The old vizier was giving advice to his son in the matter of sex and yet was extremely careful in his wording of it. There are some who would say that this wise old Egyptian gave advice in about the terms that a prudent father would use at the present time.

I have inquired of many fathers, and especially physicians, and it is rather surprising to find how reticent they were themselves on the subject. Ptah-Hotep said: "If thou desire to continue friendship in any abode wherein thou enterest, be it as master, as brother or as friend; wheresoever thou goest beware of consorting with women. No place prospereth wherein that is done, nor is it prudent to take part in it. A thousand men have been ruined for the pleasure of a little time short as a dream. Even death is reached thereby." (One cannot but wonder what the old man meant by that expression.) "It is a wretched thing. As for the evil liver, one leaveth him for what he doeth. He is avoided. If his desires be not gratified he regardeth no laws."

Christ Himself went much farther than the earlier advisers as regards sex, and the Christian tradition is founded on his well-known declaration, "He who looks upon a woman to lust after her, hath already committed adultery in his heart." Not only the acts of men and women but their very thoughts are the subject of regulation under the Christian dispensation. That does not mean that wandering fantasies on the subject of sex can be prevented from coming into the mind but it has the very definite significance that those fleeting imaginations can be suppressed or at least that the mind can be diverted

from them without much trouble if there is good will in the matter.

Whatever of fault there is in the thoughts themselves as well as the tendency for the body to be affected by them or to be carried away by them if they are indulged is thus eliminated to a very great extent. Advice is given in the confessional with regard to this and the danger of sex incitement is pointed out and penitents are encouraged to realize that if they wish to avoid sex divagations, mental or physical, it is not a difficult or at least not an impossible result for them to secure.

The Theatre.—There are certain phases of human conduct that the Church suggests the regulation of in order to prevent sex indulgence except under proper circumstances. When the Apostles first came to Rome in the second half of the first century the Romans were very much given to attendance at "shows" of various kinds. These were not only fights and sights of various kinds in the amphitheatre but also those that were held in the palaces of wealthy Romans where dancing girls often with no clothing or only such as would tend to excite passion were introduced after the guests at the feast had indulged in wine and food and were likely to be in the mood to permit their passions to lead them to sex indulgence. The Church forbade attendance at such shows because they constituted a distinct incitement to sexual indulgence, and in the course of time this particular form of evil in Rome gradually disappeared, though of course many of the wealthy still continued to foster such indulgences in order to make themselves popular with their guests.

During the second century a number of handsome theatres were built by the Antonine emperors who were very proud to leave such monuments of themselves in various parts of the empire. It is interesting to realize that there are no plays, that is no dramatic literature, from this period in Rome and that the handsome theatres were

merely for shows of various kinds very much like our burlesque shows of the modern time and appealing ever so much more to sense than to intelligence. In spite of the opposition of the Church these continued for a time but there was a gradual diminution of them until the coming of the barbarians from the North and the wiping out of a good deal of the law and order that had been fostered by the Church. The barbarians too were won over to the Church though not without serious difficulty and then the theatre gradually faded as an influence in human life.

It must not be thought that the Church is opposed to the legitimate theatre; so far is this from being the case that it is well known that the modern drama originated in certain church ceremonies which were amplified and produced at first in the churchyard and then in various places in the towns and cities. First came the mystery plays and then the morality plays. One of these mystery plays, the so-called Passion Play at Oberammergau, is the best example we have of Church interest in dramatic literature. Of the morality plays "Everyman," the original of which is some seven centuries old, was reproduced some years ago and created a dramatic sensation and attracted a great deal of attention. The Church is much readier and more anxious to commend good dramatic literature than to condemn the bad. The Jesuit *ratio studiorum* (method of study) requires the presentation of several plays each year by the students in their colleges.

As far as regards incitements to sex indulgence the Church considers these as much to be avoided as the sex indulgence itself. The reading of literature which produces definite effects on the sexual system and is likely to awaken the mechanism of reinforcement cannot be permitted or actual sex indulgence will almost inevitably follow. That is why the bishops of the United States encouraged the formation of the Legion of Decency in order

that young folks might not be subject to temptations consequent upon the viewing of motion pictures and the listening to the dialogue which is mainly occupied with sexual elements of various kinds that prove excitant of feelings connected with the sexual system.

As for those who supply either through the printed page or through the movies the fuel of excitation, the Church considers them to be in the same category as the keepers of bawdy houses and other like institutes. It is an easy way to make money but the money-making is at the expense of character and self-control of individuals, especially young individuals, who thus become so subject to sex incitements that may readily find control impossible.

Since Christianity is occupied with the thoughts as well as the acts of men it is easy to understand that reading became an important element in Church regulation. In the tenth century Hroswitha, a nun dramatist, wrote a series of plays which were probably not to be acted but which were for private reading, though some of them may have been put upon the stage for they are very dramatic in form. In her preface she said that she wrote them in imitation of Terence because she thought that Terence constituted immoral reading and she wanted to make up for that by edifying reading. She called her plays comedies because they all ended happily, since they ended in martyrdom and the martyrs were, according to Christian belief, received into heaven at once. Hroswitha did not hesitate to introduce very worldly scenes and sometimes immoral characters into her plays, and it is evident that the wise nun was occupied with observing human nature and transcribing what she saw for humanity.

The Church is perfectly willing to have her children amuse themselves but she suggests that incitements to sexual indulgence do harm rather than good, instead of amusement produce unhealthy excitement, and so she forbids

attendance at lewd shows or the cultivation of lewd fiction.

Prohibited Books.—A great many people are inclined to think that the Index of prohibited books must contain a very large number of novels, that is fiction in one form or other and especially such as portrays scenes of sexuality. Almost needless to say for anyone who knows the Index, the Inquisition pays very little attention to novels. The wise inquisitors, for the Inquisition still exists, think it scarcely worth while to pay any serious attention to most of them. They know very well that prohibition may readily be followed by a reaction in the opposite direction. To forbid immoral books by name may serve to advertise them and lead to their being read much more than would otherwise be the case. The Index bans without naming them obscene books, attacks on religion or the natural law, etc.

The Index of prohibited books mentions mainly such works as have errors of philosophy, or those that suggest such conduct in life as is definitely opposed to Christian teaching. But when a novel has a wide sale and is likely to continue to have for a generation or more, if it has objectionable features it is placed on the Index, as is said, and only those who receive special permission for some good reason are allowed to read it.

St. Paul in his Epistle to the Ephesians suggests that it is better for Christians not so much as to talk about obscenity and emphasizes that it would be better to avoid the mention of uncleanness. That seems to many people in our time an exaggeration of solicitude, the sort of nervousness in the face of danger that would do more harm than good.

There have been some very interesting experiences, however, along this line. I shall never forget the late Stanley Hall telling me of his experience at Clark University with some graduate lectures. He began a series of lectures on sex perversion with the persuasion that the straightforward conveyance of de-

tailed information with regard to this subject would do good by arousing repugnance. He was very much surprised to find that his lecture room from the very beginning was more crowded than the number of students in his class justified. That might be considered complimentary, but the young men continued to come in ever greater numbers until there was quite a group of standees at the door and even in the corridor. He then began to realize that the undergraduates were taking advantage of the opportunity to hear some savory things. After some further experience it was brought home to him that he was catering to prurency that could not but be harmful. He cancelled the course, feeling sure that it was doing more harm than good. Many another serious-minded professor has had something of that same experience.

Training of the Will.—On the other hand the Church is strongly of the opinion that training of the will can be employed to great advantage in this field. From the early days of Christianity the Church's teaching has been that the practice of self-denial in other spheres of action apart from the sexual will prove the best possible safeguard against sex divagations as young folks grow older.

That distinguished philosopher who was the Sardinian ambassador to Russia, the Comte de Maistre, who wrote the *Soirées de St. Petersburg* which attracted so much attention at the beginning of the nineteenth century, declared that, "Many a man of thirty years of age is capable of resisting successfully the allurements of a beautiful woman because at the age of five or six he was taught voluntarily to give up a toy or a sweet" (quoted by Förster in his "Marriage and the Sex Problem"). This practice is encouraged very much by the Church and there is abundant evidence from those who themselves have been the subjects of discipline of this kind of its success in making men better and more capable of self-control in many of the temptations of life.

Such a practice seems to many old-fashioned and out of date, but it was very definitely proclaimed by that distinguished German psychologist, Professor Förster, whose books on sex subjects have gone through so many editions in his native country. His volume, "Marriage and the Sex Problem," has been translated into English (1914). Förster, who was not a Catholic, appreciated highly the Church's position. He said that a great many parents and especially mothers were anxious to take measures that would protect their children as far as possible from sexual temptations

and the dangers incident to them. He insisted that the best way to do that was to have them practice self-denial with regard to other things. His own words on the subject are very straightforward:

"There are many mothers who are solicitous with regard to the question of definite instruction relating to matters of sex for their children and who are waiting anxiously a suitable moment for it. It is a great deal more important, however, that they should make their children acquainted with what has been called 'the strategy of the holy war,' that they should train them to deny themselves some favorite article of food every now and then, or to accomplish some heroic conquest of indolence, or to accustom themselves to the practice of ignoring pain or at least not allowing themselves to react strongly against it."

Consanguinity.—From the very beginning the Church has insisted that persons who are nearly related shall not marry. One reason for this undoubtedly was that close relatives are likely to be thrown so intimately in association with one another when young that it was important to create a taboo with regard to the possibility of marriage. There has always been in humanity a rather definite persuasion that marriage between near relatives was likely to be followed by offspring who were defective in various ways.

In modern times it came to be said that there was nothing in this claim of the marriage of near relatives being followed by defective offspring and that it was a mistaken notion propagated by the old taboo that had been created by the Church's legislation.

Careful investigation made in connection with the census of the United States under a fund created by Alexander Graham Bell showed very clearly just what the influence of close relationship, consanguinity as it is called, exerted in these cases. Bell, who had been a teacher of the deaf before his invention of the telephone, continued always to be interested in the deaf and he asked the census authorities for 1910 to make a special investigation of the influence of consanguinity upon eye and ear defects particularly. That census found that three to four times as many children of near relatives were born

with defective eyesight or hearing as were born in families where there was no such relationship.

This legislation of the Church, then, has been of great importance down the centuries in preventing the increase of defectives. Undoubtedly there would be ever so many more only for this strict regulation. The Church does not absolutely forbid such marriages but discourages them to as great an extent as possible and requires that a dispensation be obtained from the ecclesiastical authorities in such cases. This prevents runaway matches on the part of near relatives and it calls to special attention the definite discouragement of such marriages which is the Church's policy. The knowledge of this attitude of the Church produces a very definite effect on the minds particularly of young folks and keeps them to a very great extent from contracting such marriages.

Birth Control.—The teaching of the Catholic Church on the subject of birth control, as it is called, is entirely different from what it is often said to be. Most of those outside of the Church who talk or write on the subject are quite sure that the reason for the Church's insistence on the sinfulness of preventing conception is that either the Church is anxious to increase its own numbers for the sake of the power that will thus come, or else it assumes that there are a large number of souls, as it were, awaiting bodies in the dispensation of Providence, and that therefore the having of a large number of children in families is of itself a blessed procedure.

As a matter of fact the Church is not particularly interested in an increase in population, encourages celibacy in those who feel called to it—and is often blamed for so doing—but the Church has actually canonized a number of persons, that is declared that they had lived saintly lives, who though married dwelt together chastely as brother and sister. The Church permits a separation of husband and wife on the condition that both of them of their own free

will enter religious orders or communities and bind themselves by vows to remain there.

What the Church objects to is interference with the process of nature in the artificial prevention of conception. It looks upon that practice as a serious sin. Almost needless to say, that was the very common attitude of mind of a great many people before our generation. The majority of Christians, Catholics or Protestants, were convinced of the sinfulness of this practice.

The well-known English author, G. K. Chesterton, who is a convert to the Church, in a recent article in the New York Catholic periodical, "America," said: "My own parents were not even orthodox Puritans nor High Church people; they were Universalists more akin to Unitarians, but they would have regarded birth prevention exactly as they would have regarded infanticide." That state of mind was almost universal.

Förster, the German psychologist already mentioned, in "Marriage and the Sex Problem," says that practices of the kind which lead to prevention of conception are not only contrary to nature but "they cannot be carried on without a gradual coarsening and disintegration of feeling, as a consequence of which, especially in the man, sensibilities will be dulled which can hardly be described in words but which are of decisive importance for the whole spiritual and moral nature, particularly on the sexual side."

He emphasizes the fact that it is precisely the healthiest couples and he might almost have said the wealthiest who make chief use of the means for the prevention of conception since they feel themselves most hindered by children in their enjoyment of the pleasures of life. Robust, sporting women frequently object strongly to the restrictions of motherhood, while delicate women exhibit the most intense desire for children, and it is from them that the race will be recruited. Prevention of conception is said to be for eugenic reasons, but it does not work out that way in practice.

Förster declares also, and all those who are deeply interested in humanity cannot but agree with him, that the debasement of marriage by these practices leads more directly to divorce than any other single factor. Attention has been called in recent years to the fact that a great many of the young criminals who are now so prominent in our jails and penitentiaries come from broken homes, that is where divorce has separated the parents and where there has not been proper opportunity for the children to be brought up under such

discipline through the influence of both father and mother that their characters are properly formed.

What is presumed to be a recent development in our knowledge of the physiology of conception serves to show how ready the Church is to permit restriction in the family provided it does not interfere with nature and break natural laws. In recent years investigation in various parts of the world, in Austria, Japan, Holland and the United States, have brought obstetricians to the conclusion that there are certain days in the menstrual month during which sexual intercourse will almost certainly not be followed by pregnancy. A number of doctors, mostly Catholics, after making careful observations extended over long periods, have written on the subject. There seems to be a definite demonstration of the truth of the assertion. The Church has not spoken officially on the subject, and there has been no formal teaching approved with regard to it, but distinguished Catholic theologians all over the world have declared that this method of family limitation is not contrary to Church teaching. Parents who for good reasons wish not to have more than a small number of children may take advantage of this natural phenomenon which seems to represent a special precaution instituted by nature for definitely limiting the number of births in a family.

While this is often spoken of as a recent development and as representing a very great change in the attitude of the Church, induced by the recent interest in birth control, as a matter of fact for many years this subject has been discussed by writers of books on pastoral medicine, that is volumes which treat of the problems common to priests and physicians. Long before the present question of rhythm or the sterile period in family life came up, this subject was under discussion and confessors a generation ago advised their penitents with regard to it. There was less confidence in its effectiveness and as a matter of fact the older teaching pointed to another part of the month entirely from that now indicated. It is not the interest that has been evoked in birth control in recent years that has called the Church's attention to this subject, for that

attention had been aroused and given all due consideration long ago. I think that it is safe to say that the subject has come up from time to time for centuries and that Aristotle has a reference to it.

J. J. W.

CATHOLIC VIEW OF THE FAMILY.

ILY. In setting forth in summary form the Catholic view of the family one can do no better than follow, at least in broad outline, the recent authoritative statement of the head of the Church on the subject, namely, the marriage encyclical of Pius XI. This document was issued on the last day of the year 1930, and is known under the Latin title, *Casti Connubii* (of Chaste Wedlock). While it is true, of course, that the statement contains nothing new, it is likewise a fact, as is pointed out in the encyclical itself, that the age-old doctrine of the Church with regard to human wedlock is stated therein "in view of the present conditions, needs, errors and vices that affect the family and society." It is this that gives it peculiar value and merit.¹

The encyclical falls very logically into the following three major parts: 1) The Nature, Dignity and Blessings of Christian Marriage; 2) the Errors and Vices against It; 3) the Remedies for the

I. NATURE, DIGNITY AND BLESSINGS OF CHRISTIAN MARRIAGE

Divine Authorship.—In taking up the question of the nature of matrimony, the Supreme Pontiff recalled first of all the encyclical on marriage written some fifty years earlier by his predecessor, Pope Leo XIII, and stated that the latter had been "wholly concerned in vindicating the divine institution of matrimony, its sacramental dignity and its perpetual stability." Then he went on to reemphasize in his own way the fact that marriage is a divine rather than a human institution:

"Let it be repeated," he says, "as an immutable and inviolable fundamental doctrine, that matrimony was not instituted or restored

by man but by God; not by man were the laws made to strengthen and confirm and elevate it but by God, the Author of nature and by Christ Our Lord by whom nature was redeemed, and hence these laws cannot be subject to any human decrees or to any contrary pact even of the spouses themselves. This is the doctrine of Holy Scripture; this is the solemn definition of the sacred Council of Trent, which declares and establishes from the words of Holy Writ itself that God is the Author of the perpetual stability of the marriage bond, its unity and its firmness."

The meaning of the words is clear. In the eyes of the Church, marriage is God-made and not man-made. As a consequence it is subject to divine laws and not to human laws. This is true even prescinding from the sacramental character of the marriage of baptized Christians. That is, marriage even as a Natural Law contract, is a divine institution, a holy and religious contract and not merely a civil and profane pact. Not only has it God for its author but from the very beginning has it been a kind of foreshadowing of the Incarnation of His Son. There abides in it, therefore, something holy and innate, not derived from men but implanted by nature itself. Such has always been the accepted opinion of mankind. Whenever marriage was contemplated, it was always understood that religious ceremonies should be had, that pontiff and priests should be concerned. Only in our modern civilization do we find attempts to divorce matrimony, in theory and in practice, from religious significance and control.

Insofar as the baptized are concerned, marriage is not only a divine institution. It is also a sacrament of the New Law. This fact, of course, in no way changes the Natural Law contract. It does, however, add something to it. It makes the matrimonial consent a grace-conferring institution. It supernaturalizes it.

Dignity of Marriage.—From the nature of matrimony, from its divine authorship and sacramental character flows also its exceptional dignity. This is pointed out in the very first sentence of the encyclical. "How great is the dignity of chaste wedlock," writes Pius

¹ All quotations not otherwise marked will be from the encyclical.

XI, "may be judged best from this, that Christ Our Lord . . . not only . . . ordained it in an especial manner as the principle and foundation of domestic society and therefore of all human intercourse, but also raised it to the rank of a true and great sacrament of the New Law, restored it to the original purity of its divine institution, and accordingly entrusted all its discipline and care to His spouse, the Church."

The Part of the Human Will.—While it is true that matrimony is of its very nature of divine origin, it is none the less true that the human will also enters into it and "plays a most noble part therein." Each individual marriage arises only from the free consent of the spouses. Freedom of consent is of the very essence of the contract and the first condition for the validity of the sacrament. Indeed, so necessary is the free act of the will by which each party hands over and accepts those rights proper to the state of marriage, that it cannot be supplied by any human power—parental, civil, ecclesiastical or other. It is for this reason that the Church has always guarded so jealously the freedom of consent of the contracting parties.

However, when once freely contracted, matrimony is subject not to the whims of man, but to its divinely made laws and its essential properties. Its nature, in other words, is entirely independent of the free will of man. Hence the encyclical concludes as follows with regard to the nature of matrimony:

"The sacred partnership of true marriage is constituted both by the will of God and the will of man. From God comes the very institution of marriage, the ends for which it was instituted, the laws that govern it, the blessings that flow from it; while man, through generous surrender of his own person made to another for a whole span of life, becomes, with the help and cooperation of God, the author of each particular marriage, with its duties and blessings annexed thereto from divine institution."

The Blessings of Matrimony.—In discussing the subject of the benefits, or the so-called blessings of matrimony,

Pius XI follows St. Augustine who treated this subject under the three main headings of offspring, conjugal faith and the sacrament. "Under these three heads," says His Holiness, "is contained a splendid summary of the whole doctrine of Christian marriage."

Offspring.—It has always been the view of the Church that the prime purpose of marriage is the propagation of the human race, the begetting and rearing of children. The encyclical merely restates this attitude succinctly when it says: "Amongst the blessings of marriage the child holds first place."

Propagation of the Race.—It was the wish of the Creator of the human race to use men as His helpers in the propagation of life. By means of marriage and the family the human race was to "increase and multiply." And when we stop to consider the dignity of man and his sublime end—created, as he is, according to the image and likeness of God and destined to know, love and enjoy Him forever—we can readily appreciate, as the encyclical puts it, "how great a gift of divine goodness and how remarkable a fruit of marriage are children born by the omnipotent power of God through the cooperation of those bound in wedlock."

Education of Children.—The blessing of offspring, however, is not completed by merely begetting them. They must also be trained. And, both by the law of nature and of God, this right and duty belongs in the first place to those who began the work of nature by giving the children birth. "In matrimony," says the encyclical, "provision has been made in the best possible way for this education of children that is so necessary, for since the parents are bound together by an indissoluble bond, the care and mutual help of each is always at hand."

That the parent is the educator *par excellence* and the home the school of schools has always been the Christian view of the matter. The school teacher, as the Church sees it, acts *in loco parentis*, not, for instance, *in loco civitatis*.

It is no part of the *normal* function of the State to teach. To be sure, however, the State is entitled to see to it that its citizens receive an education sufficient to enable them to discharge their duties of citizenship.

Conjugal Faith.—Conjugal faith, or conjugal honor as it is also called, is the second of the great blessings of matrimony mentioned by St. Augustine. The encyclical describes it as consisting in "the mutual fidelity of the spouses in fulfilling the marriage contract, so that what belongs to one of the parties by reason of this contract, sanctioned by divine law, may not be denied to him or permitted to any third person; nor may there be conceded to one of the parties anything which, being contrary to the rights and laws of God and entirely opposed to matrimonial faith can never be conceded." Four elements are distinguished in it by Pius XI: unity, chastity, charity and obedience.

Unity.—In the first place, conjugal honor demands complete unity in matrimony. "Every use of the faculty given by God for the procreation of new life," says the encyclical, "is the right and the privilege of the marriage state alone, by the law of God and of nature, and must be absolutely within the sacred limits of that state." And in that state there is question of only one man and one woman. All such perversions as polygamy, polyandry and promiscuity are banned. And not only is every dishonorable external act forbidden, but also wilful thoughts and desires of such like. This is the evident meaning of the words of St. Matthew (v, 28): "Whosoever shall look on a woman to lust after her hath already committed adultery with her in his heart."

Needless to say, there is in the eyes of the Church nothing unholy or unbecoming in the proper relations of husband and wife. The sex life of the couple is God's chosen means through which they are to attain the primary purpose of marriage, the propagation of the race. Each supplies what is otherwise lacking in order that a human

being may be conceived and eventually born into the world. Furthermore, just as intercourse is licit between spouses, all that is naturally preparatory, concomitant and consequent on it is also licit.

It should be well to add, however, that according to the teaching of the Church, the marital relation involves not only a question of right but also one of duty. In other words, the right of the married couple with regard to sex relations is a mutual right, and refusal of the right by one party is rightly looked upon by the other as a breach of contract and an injustice. This is the implication of the words of St. Paul (I Cor. vii, 3): "Let the husband render the debt to the wife, and the wife also in like manner to the husband." There are, of course, justifiable reasons for refusal at times—such, for instance, as: real jeopardy to the health or the life of one of the parties, infection with an active venereal disease, uncondoned adultery, intoxication, or too serious difficulties in the upbringing of children.

Chastity.—The term "chastity" is used here in the sense of conjugal and not virginal chastity. It refers to the one check upon the mutual sex life of the husband and wife, namely, that it must not be spendthrift or unnatural. There must be no deliberate frustration of nature's plan. So long as this is the case, not only is their reciprocal love moral and upright; it is also the "work of God." They are sharers with the Deity in carrying out the divine plan for the furtherance of the human race. "If the blessing of conjugal faith is to shine with becoming splendor," says Pius XI, "that mutual familiar intercourse between the spouses themselves must be distinguished by chastity so that husband and wife bear themselves in all things within the law of God and of nature, and endeavor always to follow the will of their most wise and holy Creator with the greatest reverence toward the work of God."

Celibacy.—A few words should be added here regarding celibacy. From

the earliest times voluntary virginity or celibacy was a distinctly Christian ideal and the Church has always considered the deliberate choice of a single state, from a supernatural motive, as spiritually very fruitful. In her eyes a life of perpetual virginity dedicated to God is a better life than is one of marriage. This is not because marriage is bad, or that it is merely a concession to human frailty; but because that which is lower in our nature is thereby more completely conquered by that which is higher, and because there can be among the unmarried closer union with God, since their hearts are less divided and their oblation more complete. The latter consideration is of the utmost importance since man has been created for a supernatural end and is destined to be transformed into the likeness of God.

With regard to life-long celibacy and pre-marital chastity, the moral law is the same: no direct enjoyment of venereal pleasure is permitted; nothing offensive to the virtue of purity, whether it be in thought, word, or deed, is allowed.

Charity.—Another highly important element of conjugal faith is charity or love. There is question here of deep spiritual love as distinguished from mere physical attraction. Referring to this particular element, Pius XI states: "The love, then, of which We are speaking is not that based on the passing lust of the moment, nor does it consist in pleasing words only, but in the deep attachment of the heart which is expressed in action since love is proved by deeds." Furthermore, he points out that the primary purpose of this love is a spiritual one, namely, "that man and wife help each other day by day in forming and perfecting themselves in the interior life; so that through their partnership in life they may advance ever more and more in virtue, and above all that they may grow in true love towards God and their neighbor." The ideal, therefore, that the marital pair should both hold in view and strive after is that their merely human love become elevated and supernaturalized through divine love.

Such a love is of the very essence of Christianity, and conjugal faith will indeed "bloom most beautifully and nobly" where it is found in the home world.

Obedience.—Under the title "honorable noble obedience," the marriage encyclical deals at some length with the subject of the respective positions of the family members within the home. It argues that there must not only be love within the home, but also an "order of love." It reaffirms the traditional view of the Church that the husband and father is the head of the home and it points to the scriptural justification of the Church's stand on this matter, namely, the words of St. Paul to the Ephesians (v, 22-23): "Let women be subject to their husbands as to the Lord, because the husband is the head of the wife, as Christ is head of the Church." To make clearer, and more specific, however, the attitude of the Church regarding the position of the wife and mother in the home, Pius XI then goes on to show more precisely what is implied, and what is not implied, in the so-called subjection (*obtemperatio*) of the wife.

It does not, he says, "deny or take away the liberty which fully belongs to the woman in view of her dignity as a human person, and in view of her noble office as wife and mother and companion; nor does it bid her obey her husband's every request if not in harmony with right reason or with the dignity due to a wife; nor, in fine, does it imply that the wife should be put on a level with those persons who in law are called minors, to whom it is not customary to allow free exercise of their rights on account of their lack of mature judgment, or of their ignorance of human affairs." However, it does forbid "that exaggerated liberty which cares not for the good of the family." In other words, it forbids "that in this body which is the family the heart be separated from the head to the great detriment of the whole body and the proximate danger of ruin. For if the man is the head, the woman is the heart, and as he occupies the chief place in ruling so she may and ought to claim for herself the chief place in love."

The Sacrament.—The third blessing of Christian marriage is "the Sacrament." The term is here taken to mean

two distinct things, namely, the indissolubility of the marriage bond and the elevation of the matrimonial contract by Christ to the dignity of an efficacious means of grace. In the case of the baptized, marriage is both indissoluble and grace-conferring. That is, it is a sacrament in the full and technical sense of the term. In every case it is by nature indissoluble or inviolably stable. The scriptural basis that the encyclical refers to in substantiation of the latter statement is the text of St. Matthew: "What God hath joined together let no man put asunder." (xix, 6) Having been spoken of the marriage of our first parents, the prototype of every future marriage, these words must of necessity include all true marriage.

But Pius XI, not content with merely calling attention to this scriptural argument for the indissolubility of the marriage tie, also sets forth in considerable detail the benefits that normally flow from it. In doing this he distinguishes between benefits that accrue to the married parties themselves, those that accrue to the offspring and those that accrue to society.

His own words follow: "First of all, both husband and wife possess a positive guarantee of the endurance of this stability which that generous yielding of their persons and the intimate fellowship of their hearts by their nature strongly require, since true love never falls away. Besides, a strong bulwark is set up in defense of a loyal chastity against incitements to infidelity, should any be encountered either from within or from without; any anxious fear lest in adversity or old age the other spouse would prove unfaithful is precluded and in its place there reigns a calm sense of security. Moreover, the dignity of both man and wife is maintained and mutual aid is most satisfactorily assured, while through the indissoluble bond, always enduring, the spouses are warned continuously that not for the sake of perishable things nor that they may serve their passions but that they may procure one for the other high and lasting good have they entered into the nuptial partnership to be dissolved only by death. In the training and education of children, which must extend over a period of many years, it plays a great part, since the grave and long enduring burdens of this office are best borne by the united efforts of the parents. Nor do lesser benefits accrue to human society as a

whole. For experience has taught that unsailable stability in matrimony is a fruitful source of virtuous life and habits of integrity. Where this order of things obtains, the happiness and well-being of the nation is safely guarded; what the families and the individuals are, so also is the State, for a body is determined by its parts. Wherefore, both for the private good of husband, wife and children, as likewise for the public good of human society, they indeed deserve well who strenuously defend the inviolable stability of matrimony."

The indissolubility of marriage appears from the very nature of the contract. It is an essentially altruistic contract wherein the good of the race is given first place and the good of the individual is subordinated, having the nature of a means to an end. After all it is only selfishness or individual difficulties that propose to dissolve the marriage contract. But a general law cannot disregard the nature of the ordinary case in order to make exceptions for the few who will possibly or certainly suffer because the law exists.

Unconsummated Marriage and the Pauline Privilege.—Before leaving the subject of indissolubility, the encyclical also refers to the Church's view with regard to unconsummated marriages and explains what is meant by the so-called Pauline Privilege. "And if this stability," it says, "seems to be open to exception, however rare the exception may be, as in the case of certain natural marriages between unbelievers, or amongst Christians in the case of those marriages which though valid have not been consummated, that exception does not depend on the will of men nor on that of any merely human power, but on divine law, of which the only guardian and interpreter is the Church of Christ."

Only consummated marriages, according to the mind of the Church, are indissoluble. She maintains that since only a marriage that has been both duly celebrated and duly consummated by the procreative act is a full and perfect marriage, a duly celebrated but unconsummated marriage—granted, of course, the consent of the married pair and of the Church—may be dissolved. In-

stances of this kind are found today. They have been found also in the past.

Even in the case of a consummated marriage, provided it is a non-Christian marriage, there is a divinely ordained exception. It is known as the Pauline Privilege, and has as its basis the following words of St. Paul to the Corinthians: "If any brother hath a wife that believeth not, and she consent to dwell with him, let him not put her away. And if any woman hath a husband that believeth not, and he consent to dwell with her, let her not put away her husband. . . . But if the unbeliever depart, let him depart; for a brother or sister is not under servitude in such cases." (I Cor. vii, 12, 13, 15)

The Church interprets these words as meaning that if a pagan partner demands of his wife (or husband) to lead a life of sin or to desert the Catholic religion, or if the pagan partner has gone off, then on the baptism of the party in question, the latter is privileged to marry again, and this second marriage by divine authority breaks off the bond of the first marriage. The laws of the Church require, however, that in such instances the party who is being converted makes what are known as the "interpellations," that is, the question must be asked of the pagan partner whether he (or she) will live together with the Catholic party peacefully and without hurt to his (or her) rights.

II. ERRORS AND VICES AGAINST CHRISTIAN MARRIAGE

After showing in a positive way the attitude of the Church toward marriage, Pius XI approaches the subject in a negative way. Step by step, he traverses in the second major section of the encyclical the same ground he covered in the first, pointing to the various errors and vices that stand opposed to the Church's doctrines on marriage and the family.

General False Principle.—The general principle, lying at the root of the errors and vices opposed to true Christian marriage, is the erroneous one that

"matrimony is repeatedly declared to be not instituted by the Author of nature nor raised by Christ the Lord to the dignity of a true sacrament, but invented by man." The great evils which flow from this false view can readily be inferred from the consequences which its advocates deduce from it, namely, "that the laws, institutions and customs by which wedlock is governed, since they take their origin solely from the will of man, are subject entirely to him, hence can and must be founded, changed and abrogated according to human caprice and the shifting circumstances of human affairs; that the generative power which is grounded in nature itself is more sacred and has wider range than matrimony—hence it may be exercised both inside as well as outside the confines of wedlock." On the basis of such views some have gone so far as even to concoct new species of union—so-called "temporary," "experimental" and "companionate" marriages, which, as the encyclical points out, "offer all the indulgence of matrimony and its rights without, however, the indissoluble bond and without offspring unless later the parties alter their cohabitation into a matrimony in the full sense of the law." Some even have sought to have legitimized by the law these "hateful abominations which beyond all question reduce our truly cultured nations to the barbarous standards of a savage people."

False Principles in Detail.—After having discussed the foregoing general principle Pius XI proceeds in his encyclical to enumerate and refute, one by one, the various evils, the errors and vices opposed to the three blessings of matrimony—offspring, conjugal faith and the sacrament.

Under the first, namely, offspring, the following specific evils are considered: birth prevention, abortion, and faulty eugenics.

Birth Prevention.—Referring to the fact that some have the boldness to call offspring the "disagreeable burden of matrimony," and to say that they are

to be avoided by married people, not through virtuous continence—which is permissible when both parties consent—but through the frustration of the marriage act, the Supreme Pontiff states unequivocally that “no reason, however grave, may be put forward by which anything intrinsically against nature may become conformable to nature and morally good.” And he adds: “Since, therefore, the conjugal act is destined primarily by nature for the begetting of children, those who in exercising it deliberately frustrate its natural power and purpose sin against nature and commit a deed which is shameful and intrinsically vicious.” These words succinctly express the attitude of the Church with regard to birth prevention in the sense of the artificial limitation of the family. Artificial birth control, or the frustration of the marriage act, is unnatural, morally wrong, intrinsically vicious. No purpose or circumstance can justify it.

Nor is there anything new about this view. It is but the age-old doctrine of the Church stated over again. The “Fathers,” or early writers of the Church, definitely reprobated birth control. The Popes have time and again condemned it. The Roman Congregations, whose duty it is to answer vexing points of moral practice, have never in their many answers done anything but condemn it. The encyclical but repeats the self-same doctrine.

Infertile Periods.—Some stupidly argue to-day that if contraception—the artificial limitation of the family—is wrong, then the use of the marriage right during infertile periods is also unequivocally wrong. To the unbiased, however, the fundamental difference between these two methods of controlling the birth rate is readily apparent. The former involves a deliberate frustration of nature, the latter does not. Needless to add, it is absurd to argue that conception must follow each act of intercourse. But it is essential to argue that insofar as lies with the marital partners, conception must be able to follow each

act of intercourse. The sterile place no barriers in the way. They do nothing to make impossible the natural results of nature’s processes and nature’s plan. In other words, they do not frustrate nature.

Abortion.—That Pius XI should refer in his encyclical to abortion—the taking of the life of the unborn child—as a “very grave crime,” will, of course, cause no surprise. Abortion is simply murder, a violation of the precept of God and of the law of nature, “thou shalt not kill.” The Supreme Pontiff, however, goes a step further with regard to this heinous offense. He lays it down as a principle that it is the duty of the public authority by appropriate laws and efficacious sanctions to protect the lives of the innocent. And that, he points out, is particularly the case when those whose lives are endangered cannot defend themselves—“among whom we must mention in the first place infants hidden in the mother’s womb.”

Eugenic Fallacies.—Two things must be distinguished here, the prevention of marriage and the sterilization of certain individuals. Both are to be condemned as morally wrong. As the Supreme Shepherd points out, those who advocate either practice lose sight of the fact that “the family is more sacred than the State, and that men are begotten not for earth and for time but for heaven and eternity.”

To marry is one of the most fundamental of the natural rights of man. Hence, according to the mind of the Church, the State has no right to prevent from marrying those who are naturally fit for marriage—those, in other words, who give reasonable promise of being able to carry out the functions of married life. The notion that such motives as saving expense or bettering the race are sufficient justification for the State to deny the individual the use of such a fundamental right as marriage is a highly pernicious one. It might readily lead not only to excessive paternalism but also to intolerable tyranny. It is to be remembered that the

State exists for the good of the citizen and not, vice versa, the citizen for the good of the State. The body politic does not originate the individual's natural rights. It finds them in his possession and exists to protect them and to further their legitimate use. It has no right to disregard them or to play fast and loose with them.

Sterilization.—By the same token is sterilization forbidden. To sterilize an individual is to deprive him of the proper use of a natural faculty. It is to deny him the inherent right to propagate his kind. The State has no blanket right to do such a thing. As the encyclical states: "Public magistrates have no direct power over the bodies of their subjects; therefore, where no crime has taken place and there is no cause present for grave punishment, they can never directly harm, or tamper with, the integrity of the body, either for the reason of eugenics or for any other reason."

Nor is the individual himself free to submit to sterilization. Man has not full dominion over his body. He is, as it were, the Creator's administrator, God reserving for Himself both life and integrity, except for certain recognized exceptions such as capital punishment and the amputation of a member for the good of the whole body. Hence the pronouncement of the encyclical: "Christian doctrine establishes, and the light of reason makes it most clear, that private individuals have no other power over the members of their bodies than that which pertains to their natural ends; and they are not free to render themselves unfit for their natural functions, except when no other provision can be made for the good of the whole body."

However, while the Church condemns the materialistic and paternalistic program of those who would put eugenics "before the aims of a higher order," she is by no means inimical to the cause of eugenics as such. Indeed, she has done much down through the centuries that has made for race betterment. How her

moral teachings, for instance, have contributed toward this end, is well shown by the following words of a contemporary Catholic writer:

"Catholic moral teaching has as its objective not merely that one live more perfectly but also that one perfect and elevate the race. This it accomplishes by its general tenor and by its particular prescriptions:

It teaches that there is a spiritual soul.

Respect for the body, mastery of the body, and a general desire for well-being.

Continence and chastity in youth; a celibacy that is spiritually fruitful.

Serious and Christian preparation of the future spouses and mutual loyalty—a serious and grave command, at least in the essentials.

Impediments to marriage—of great eugenic value, as doctors have always admitted, especially in 'consanguinity.'

Sanctification of marriage and of the duties of the married couple.

Attention to morality and health at the time of conception; and for the mother special care in the time after birth or conception.

An education that is firm and enlightened. Societies and continual efforts against public immorality and social maladies, alcoholism, venereal diseases.

Efforts without ceasing for the economic well-being of the individual; for general hygiene, for child welfare, housing, prosperity.

That is the ideal and it can all be found in the moral teaching of the Catholic Church." (Bakewell Morrison, in *Marriage*.)

It goes without saying that the Church approves of such a procedure as that, for example, adopted by Dr. Bernstein in the State of New York. His method, as is well known, instead of approving the sterilization of defectives, calls for their intelligent treatment and proper training so that all of those who are innately capable of taking their place in society and marrying, may be adequately prepared to do so.

It is understood, of course, that the Church does not forbid anyone to dissuade defectives from marrying. What she does forbid, however, is the enforced denial of the right to marry to individuals who are capable of fulfilling the ordinary obligations of marital or family life.

Conjugal Faith.—Another group of

errors given mention in the marriage encyclical are those that involve a violation of the blessing of matrimony known as conjugal faith. In taking up the discussion of this subject Pope Pius first of all points out that "every sin committed as regards the offspring becomes in some way a sin against conjugal faith, since both these blessings are essentially connected." After that he proceeds to discuss the specific sources of error and vice which correspond to the virtues which are demanded by conjugal faith, "the *chaste honor* existing between man and wife, the *due subjection* of wife to husband, and the *true love* which binds both parties together."

Those spouses offend against *chaste honor* or marital fidelity, and at the same time against marital unity, who in any way countenance a harmful and false friendship toward a third party. Such are condemned, in the words of Pius XI, "by that noble instinct which is found in every chaste husband and wife, and even by the light of the testimony of nature alone—a testimony that is sanctioned and confirmed by the command of God: 'Thou shalt not commit adultery' (Exod. xx, 14); and the words of Christ: 'Whosoever shall look on a woman to lust after her, hath already committed adultery with her in his heart' (Matt. v, 28)."

Those offend against marital obedience, or the *due subjection* of wife to husband, who set aside the honorable and trusting obedience which the woman owes to the man. In discussing this subject the Supreme Pontiff mentions and defines the following three faulty types of emancipation of women: "Physiological, that is to say, the woman is to be freed at her own good pleasure from the burdensome duties properly belonging to a wife as companion and mother; social, inasmuch as the wife being freed from the cares of children and family should, to the neglect of these, be able to follow her own bent and devote herself to business and even public affairs; finally, economic,

whereby the woman even without knowledge and against the wish of her husband may be at liberty to conduct and administer her own affairs, giving her attention chiefly to these rather than to children, husband and family."

Such emancipation, he adds, is not true emancipation. It is not that true and exalted liberty which belongs to the noble office of a Christian woman and wife. Rather is it "the debasing of the womanly character and the dignity of motherhood, and indeed of the whole family, as a result of which the husband suffers loss of his wife, the children of their mother, and the home and the whole family of an ever watchful guardian."

Finally, there are those who offend against conjugal faith by offending against *true love*. Here we find the ones who would substitute for that true and solid love, which is the basis of conjugal happiness, "passing sentiment or mere love of the senses." According to them, the only bond by which husband and wife are linked together is "sympathy" or "a certain vague compatibility of temperament." And when that ceases the marriage is to be dissolved. Such a procedure would indeed be, as the encyclical points out, to build a house upon sand; while what is really needed is a house built upon a rock, that is, a house built upon rational love or affection, upon a capacity for self-sacrifice both for each other's welfare and for that of the children. Only such a house can stand. Only such love will neither fall away nor be shaken by adversity.

The Sacrament.—In examining the errors and vices opposed to the "Sacrament," one finds that both the sanctity and the indissolubility of marriage are denied by the enemies of true matrimony. In taking up the discussion of these particular errors, it will also be in place to refer briefly to the Church's attitude toward mixed marriages, and toward separations and annulments.

Denial of Sanctity.—Altogether contrary to the view of the Church, with

regard to the sanctity and the divine origin of marriage, is the opinion of those who maintain that matrimony is a purely profane and not a religious thing, that it is man-made and not divinely ordained. In answer to these, Pius XI has the following to say:

"Even by the light of reason alone, and particularly if the ancient records of history are investigated, if the unwavering popular conscience is interrogated and the manners and institutions of all races examined it is sufficiently obvious that there is a certain sacredness and religious character attaching even to the purely natural union of man and woman, 'not something added by chance but innate, not imposed by men but involved in the nature of things,' since it has 'God for its author and has been even from the beginning a foreshadowing of the Incarnation of the Word of God.' This sacredness of marriage which is intimately connected with religion and all that is holy, arises from the divine origin we have just mentioned, from its purpose which is the begetting and educating of children for God, and the binding of man and wife to God through Christian love and mutual support; and finally, it arises from the very nature of wedlock, whose institution is to be sought for in the farseeing Providence of God, whereby it is the means of transmitting life, thus making the parents the ministers, as it were, of the Divine Omnipotence. To this must be added that new element of dignity by which the Christian marriage is so ennobled and raised to such a level that it appeared to the Apostle as a great sacrament."

Mixed Marriages.—The Church has always set her face against mixed marriages, that is, against unions between Catholics and non-Catholics. The occasional dispensations she grants for such unions are given with reluctance and only upon the following conditions: The non-Catholic must promise to allow the children to be baptized and to be brought up as Catholics; he must promise not to interfere with the religious practices of the Catholic party; the marriage ceremony must be performed by a Catholic priest.

The Church takes the attitude that Catholics who contract mixed marriages fail conspicuously in the respect and reverence that should be accorded matrimony because of its sacramental character. She also deplores the religious indifference and even defections from

religion which not infrequently result from these unions. Furthermore, she notes that they are a threat to the firmness of the marriage bond. "There will be wanting," says the encyclical regarding mixed marriages, "that close union of spirit which, as it is the sign and mark of the Church of Christ, so also should it be the sign of Christian wedlock, its glory and adornment. For where there exists diversity of mind, truth and feeling, the bond of union of mind and heart is wont to be broken, or at least weakened. From this comes the danger lest the love of man and wife grow cold, and the peace and happiness of family life, resting as it does on the union of hearts, be destroyed."

Denial of Indissolubility.—With regard to the permanence of the marriage tie the attitude of the enemies of the Sacrament is clear. The bond, they insist, is dissoluble. Not only is divorce to be permitted but it is even to be sanctioned by law. Some even go so far as to state that "marriage, being a private contract, is, like other private contracts, to be left to the consent and good pleasure of both parties, and so can be dissolved for any reason whatsoever."

Many and varied are the grounds they put forward to uphold these contentions. Over against them all Pius XI opposes the unchanging teaching of the Church: "Opposed to all these reckless opinions," he says, "stands the unalterable law of God, fully confirmed by Christ, a law that can never be deprived of its force by the decrees of man, the ideas of a people or the will of any legislator: 'What God hath joined together, let no man put asunder.' And if any man, acting contrary to this law, shall have put asunder, his action is null and void, and the consequence remains, as Christ Himself has explicitly confirmed: 'Everyone that putteth away his wife and marrieth another committeth adultery: and he that marrieth her that is put away from her husband committeth adultery.' Moreover, these words refer to every kind of marriage, even that which is natural and legitimate only; for, as has already been observed, that indissolubility by which the loosening of the bond is once and for all removed from the whim of the parties and from every secular power is a property of every true marriage."

Much to the point here, too, are the words of Pope Leo XIII quoted by Pius

XI in concluding his discussion of divorce: "Great is the force of example, greater still that of lust; and with such incitements it cannot but happen that divorce and its consequent letting loose of passions should spread daily and attack the souls of many like a contagious disease or a river bursting its banks and flooding the land." How strikingly those words have been fulfilled, even the most biased will have to admit. They are only additional proof of the wisdom of the divine law which unfailingly maintains that marriage is indissoluble, that there is no right of divorce.

Separation.—By a separation is meant a permission for husband and wife to live apart. The Church upholds the right of separation under certain circumstances and Pius XI points to this fact in answer to certain objections raised against the indissolubility of marriage. "The objections brought against the firmness of the marriage bond," he says, "are easily answered. For, in certain circumstances, imperfect separation of the parties is allowed, the bond not being severed. This separation which the Church herself permits, and expressly mentions in her Canon Law in those canons which deal with the separation of the parties as to marital relationships and cohabitation removes all the alleged inconveniences and dangers." Needless to add, since there is involved no dissolution of the bond, there is also no question of remarriage.

Annulment.—An annulment means an official declaration by the Church that a certain alleged marriage was null and void. Among the reasons for which a marriage may be declared null or invalid are the following: a diriment impediment was discovered *after* the marriage; the consent was faulty; the proper "form" was not used. Respect and reverence for the dignity of the Sacrament demand that instances, or alleged instances, of invalid marriages be formally investigated and that decisions be given by competent and learned authority. It is for the adjudication of these and similar matters that the

Church maintains her Ecclesiastical Courts.

E. S.

CELESTINUS, S. PETER. In Italy this saint, the object of devotion by sterile women, has a grotto where women go to lie in a natural rock depression which, traditionally, was produced by the imprint of the saint's body.

Writing of this superstition, an Italian story-teller of to-day remarks: "I myself knew at school a lad whom we all called *St. Celestinus* for the reason that his mother had conceived in this fashion" (*Mr. Aristotle*, by Ignazio Silone, translated from the Italian by Samuel Putnam, 1935).

CENSORSHIP OF SEX INSTRUCTION BOOKS. Fifteen years ago, the legal status of sex education—for adults as well as for adolescents—was in a dubious state. Books dealing with vital questions regarding sex were few, and their career precarious. W. F. Robie's *Art of Love* had been adjudged obscene; Marie C. Stopes' *Married Love* was circulated surreptitiously. There was no appeal for sexual ethics based on decency and good taste; the age-old deterrents were still being resorted to: threat of disease, public disgrace, eternal damnation. Children, animated by a natural curiosity, were driven for the most part to the streets, pornographic literature and corrupt companions for information.

It was for a good reason that Joseph Collins wrote at about that time: "The truth about sex is a large order. Church, convention and commerce do not want it and will not have it. Were I to tell as much of the truth as I know about sex, society would frown at me, the postal authorities would forbid its circulation, some self-constituted censor would hale me before a tribunal."

The Dennett case marked a turning point. In 1918 Mary Ware Dennett, long an active worker for liberal reform, made a short compilation of elementary sex information for her two adolescent sons. The material was subsequently published in the *Medical Review of Reviews*, edited by Victor Robinson. It was so enthusiastically

received that the editor of the periodical persuaded Mrs. Dennett to reprint it in pamphlet form for general use. The pamphlet was called *The Sex Side of Life; An Explanation for Young People*. It was widely and continuously circulated for many years, and won the approval of many educational, religious and welfare organizations. It was sold at twenty-five cents a copy, which barely covered its cost.

In 1922 the postal authorities ruled that the pamphlet was unmailable. Mrs. Dennett wrote several times to the Postmaster, asking him to specify what portions in his opinion contravened the Postal Law. She received no explanation. Six years later, in 1928, she received a request for a copy from a "Mrs. Miles" in Grottoes, Virginia. It later turned out that there was no Mrs. Miles. The order had been sent by a postal inspector to entrap Mrs. Dennett. She was promptly indicted for sending "obscene" matter through the mails.

A motion was made to quash the indictment. It came on for hearing before Federal Judge Moskowitz. Realizing the importance of the case, the judge was reluctant to rely entirely on his own judgment, and resorted to an unusual procedure. He invited three clergymen—a Catholic priest, a Jewish rabbi and a Protestant minister—to share the bench with him when the motion was argued. He wished them to "aid the conscience of the court." The publicity that attended the argument disturbed the judge. He declared that there would be no further public hearings. The recommendations of these religious advisors was never disclosed. And the judge refused to quash the indictment.

Mrs. Dennett was placed on trial in April, 1929. She was the accused in a criminal case. She faced a jury of stolid Brooklyn sexagenarians and heard herself denounced by the prosecutor as a woman who was trying to drag society into the sewer. No wonder *The New York World* wrote that "the ghost of

Anthony Comstock rose like a palpable presence from the grave, exulting to see his work go marching on."

In the course of the trial the defense attempted to show that Mrs. Dennett had never profited by distributing her pamphlet; that she had received large orders from such irreproachable institutions as Y.M.C.A.'s, The Child Study Association, and the Union Theological Seminary; that the Government itself, through its Federal Health Service, had for many years distributed millions of booklets practically identical in content with Mrs. Dennett's. All these efforts were blocked by the prosecution. The jury was out forty minutes, and brought in a verdict of guilty.

Technically, Mrs. Dennett was convicted of sending obscene matter through the mails. In effect, however, she was adjudged guilty of being a sex-heretic. She had advocated the dissemination of basic biologic facts, and had dared to assert that physical love might be not only noble and beautiful but also pleasurable. She had expressed the hope that birth control would some day be legally recognized. She had suggested that masturbation would not necessarily consign one to eternal damnation. No wonder the verdict raised a storm of public protest.

The *Detroit Free Press* said: "The atrociousness of this conviction is less surprising than the fact that an intelligent and earnest mother can be exposed to such a sentence for no greater a crime than attempting to give boys and girls the benefit of mature experience on the most important subject in life. The mentality of those responsible for the prosecution of Mrs. Dennett is that of the first fifteen centuries of the Christian era. Neither the doctors nor enlightened laymen have been able to break down the barriers that keep from youth the truth about marriage and parenthood. The process of racial reproduction is still regarded as a divine mystery, which it is impertinence on the part of man to penetrate."

The victory for Comstockery was short-lived. In March, 1930, the Circuit Court of Appeals reversed the conviction and freed Mrs. Dennett, handing down an opinion which constituted the first outspoken judicial recognition of

the social need for sexual enlightenment. The Court said:

"It may be assumed that any article dealing with the sex side of life and explaining the functions of the sex organs is capable in some circumstances of arousing lust * * * But it can hardly be said that because of the risk of arousing sex impulses, there should be no instruction of the young in sex matters and that the risk of imparting instruction outweighs the disadvantages of leaving them to grope about in mystery and morbid curiosity and of requiring them to secure such information, as they may be able to obtain, from ill-informed, and often foul minded companions, rather than from intelligent and high minded sources * * * The old theory that information about sex matters should be left to chance has greatly changed and, while there is still a difference of opinion as to just the kind of instruction which ought to be given, it is commonly thought in these days that much was lacking in the old mystery and reticence * * * The statute we have to construe was never thought to bar from the mails everything which might stimulate sex impulses. If so, much chaste poetry and fiction, as well as many useful medical works would be under the ban. Like everything else this law must be construed reasonably with a view to the general objects aimed at * * * The defendant's discussion of the phenomena of sex is written with sincerity of feeling and with an idealization of the marriage relation and sex emotions. We think it tends to rationalize and dignify such emotions rather than to arouse lust * * * Accurate information, rather than mystery and curiosity, is better in the long run and is less likely to occasion lascivious thoughts than ignorant anxiety."

The good work had begun. Prior to 1931, Dr. Stopes' *Married Love* had been subjected to severe vicissitudes in the United States. Although the *Medical Review of Reviews* had said of the book that it represented the most notable recent advance in the knowledge of women's psycho-physiological life, and although it treated with frankness and insight the obstacles to conjugal happiness, for many years it was branded by the Customs people as obscene, and denied entry into this country. In New York State a physician was convicted of selling a copy in 1921; the case went to the Court of Appeals, and the conviction was upheld. As a result a treatise of real social usefulness was branded as pornography, and com-

pelled to circulate through devious channels.

The book came up in court once more in 1931, and it was then legalized by Federal Judge John M. Woolsey. The judge said:

"It makes some apparently justified criticisms of the inopportune exercise, by the man in the marriage relation, of what are often referred to as his conjugal or marital rights, and it pleads with seriousness, and not without some eloquence, for a better understanding by husbands of the physical and emotional side of the sex life of their wives. I do not find anything exceptionable anywhere in the book, and I cannot imagine a normal mind to which this book would seem to be obscene or immoral within the proper definition of those words, or whose sex impulses would be stirred by reading it. Whether or not the book is scientific in some of its theses is unimportant. It is informative and instructive and I think that any married folk who read it cannot fail to be benefited by its counsels of perfection and its frank discussion of the frequent difficulties which necessarily arise in the more intimate aspects of married life, for as Professor William Sumner aptly used to say in his lectures on the Science of Society at Yale, marriage, in its essence, is a status of antagonistic cooperation. In such a status, necessarily, centripetal and centrifugal forces are continuously at work, and the measure of its success obviously depends on the extent to which the centripetal forces are predominant. The book before me here has as its whole thesis the strengthening of the centripetal forces in marriage, and instead of being inhospitably received, it should, I think, be welcomed within our borders."

Curiously enough, a book designed for the rational sex instruction of children had been legalized *before* a similar book intended for adults.

Helena Wright's *The Sex Factor in Marriage* was originally published in England, where it was generously received by medical and scientific journals. A copy was sent to this country early in 1931. It was seized and examined at the Customs under the Tariff Act, and was officially declared legal for admission in April 1931. This administrative ruling, though accorded very little publicity, was of far-reaching importance. The frontiers of decency had once more been moved further back. Neither of Dr. Stopes' books had gone into the subject of the technique of sex

relations with the degree of particularity to be found in *The Sex Factor in Marriage*.

Still, the matter had repercussions. One arm of bureaucracy never knows what the other arm is doing. Shortly after the appearance of the book here, the publishers received a complaint from the postal authorities. Apparently steps were about to be taken to declare the volume unavailable. It was then pointed out to the postal inspector in charge that the Customs people had already placed the governmental seal of approval on the book. Although this discovery caused considerable chagrin and irritation in official quarters, the book was not molested thereafter.

And so it may safely be said today that an accurate exposition of sex facts, in decent language and proper spirit, cannot be regarded as obscene even though it may arouse sex impulses.

It must be remembered that both the Dennett decision and the Married Love decision were predicated on the principle that any information which enabled a person to understand his own sex nature, and thus to lead a healthier and happier life, was of social benefit, and should not be suppressed. But there is no cogent reason why this principle should be restricted to books dealing solely with normal sex problems. The average man requires a knowledge of the pathological aspects of sex, in order to enable him, as a responsible member of the community, to deal intelligently with the social problem created by those who represent a departure from the norm. There are many other works, generally sold, that treat of the abnormalities of sex. Among these are Krafft-Ebing's *Psychopathia Sexualis*, Symonds' *Sexual Inversion*, Stekel's *Bi-Sexual Love* and *Homosexual Neuroses*, Van de Velde's *Ideal Marriage*, and Thesing's *Genealogy of Sex*. There can be no doubt that these works have become part of the general reading matter of the community, and are legal for distribution not only to qualified persons, such as physicians, surgeons, psychia-

trists, pathologists, professors and students of medicine, but also to laymen.

In the dissemination of sex instruction, as in books, the progress has not been entirely smooth. In spite of the publicity given to the Dennett case and the *Married Love* case, there were people in authority who apparently never heard of them. And, singular as it may seem, some of the setbacks that were encountered arose in our citadels of learning.

Not long ago two members of the faculty at the University of Missouri, Dr. H. O. DeGraff, Professor of Zoology, and Dr. Max P. Meyer, Professor of Experimental Psychology, prepared a sex questionnaire in connection with a course in sociology. The questionnaire was circulated among the students. It was designed to elicit frank answers upon which a system of practical ethics might be predicated. There were two sets of questions, one for men and one for women. The first three questions on the women's paper were as follows:

1. (a) If you were engaged to marry a man and suddenly learned that he had at some time indulged in illicit sexual relations, would you break the engagement?
- (b) Would you break the engagement if you learned that he had so indulged frequently, and
- (c) And if, after marriage, you were to find that your husband was sexually unfaithful to you, would you terminate your relations with him?
2. (a) Would you quit associating with an unmarried woman on learning that she had at some time engaged in sexual irregularities?
- (b) On learning that she had so engaged often and promiscuously?
- (c) On learning that she had accepted money in return for her sexual favors?
- (d) Would you quit associating with a married woman on learning that she engaged in extra-marital sexual activities?
3. (a) Are your own relations with men restrained most by religious convictions, fear of social disapproval, physical repugnance, fear of pregnancy, lack of opportunity, fear of venereal disease or pride in your own ability to resist temptation?
- (b) During your childhood did you ever

engage in mutual sex-play with another individual?

- (c) Since sexual maturity, have you ever engaged in specific sexual relations?

The remaining eight questions dealt with trial marriage, divorce and companionate marriage. A corresponding paper was used for the men. No publicity attended the investigation; it was conducted quietly. When the Board of Curators of the University learned about it, severe disapproval was expressed, and the two professors were suspended a year without pay.

Early in February 1930, *Varsity*, Columbia University's literary magazine, directed a questionnaire to four hundred Seniors, requesting information as to their personal views on modern trends in marriage, morals and religion. Mindful of the University of Missouri incident, the editors of *Varsity*, requested opinions only, not reports based on actual experience. The questions were:

Do you agree that the present moral code is antiquated and should be reformed?

Do you believe in sex affairs outside of marriage?

Do you agree with the marriage reforms advocated in "Marriage and Morals," by Bertrand Russell?

Would you marry only a woman who had had no sex affairs?

Do you feel that any serious attachment for a woman should imply marriage?

Does religion have any appeal to you as part of a personal philosophy?

Give any remarks on what you consider a desirable reform in the field of marriage and morals.

The article setting forth the results of the questionnaire was to be published in the March 1930 issue of *Varsity*. On February 25, Dean Hawkes announced that the article would not appear. The student editors, when interviewed, refused to state why and by whom the article had been suppressed. It was found, however, that Dean Hawkes' announcement had come after a preliminary tabulation of the first seventy-five answers received. In these the Seniors had insisted that "the present moral code is antiquated and ought to be reformed," had approved of

extra-marital sex relations; had indicated a willingness to marry women of previous sex experience; and had opposed the notion that serious attachment should imply marriage.

The law, some people insist, is crazy. Certainly no branch of it is as full of absurdities and incredible kinks as that of obscenity. One L. A. Tatum of Tallahassee, Florida, disapproved of the texts and reference books that were used in the Florida State College for Women. He claimed he had proof that they were very "improper and objectionable." He commenced a purity crusade, calling upon the college, the State Board of Education, and the legislature in turn to root out the evil. He met with opposition and indifference. To justify his stand, he and one Prichard, issued two pamphlets containing excerpts taken from the books he was warring against. They posted 5000 of these pamphlets. They were promptly indicted by the Federal authorities for sending obscene literature through the mails.

M. L. E.; A. L.

CHAMPI (French). Literally, a "child of the fields," that is, a foundling, a changling-child; cf. the German *Wechselkind*.

CHASTITY, CONJUGAL. Continence in marriage; the state of husband and wife who live in celibacy.

St. Augustine (*Letters*, cclxii): "I have been very greatly grieved that you chose so to act towards your husband that the edifice of chastity which had already begun to be built up in him has, through his failure to persevere, toppled to the pitiful downfall of adultery. If after making to God a vow of chastity and already undertaking its observance in deed and in disposition, he had returned to his wife's body, his case would have been deplorable enough; but how much more deplorable is it now that he has plunged to deeper destruction, with such precipitate collapse into adultery, furious towards you, injurious to himself, as if his rage at you would be the more violent if he accomplished his own ruin! . . . I leave out of account the fact that I know you took this chastity upon yourself before he consented, which was not according to sound doctrine, for he should not have been defrauded of the debt you owed

him of your body, before his will too joined with yours in seeking that good which is above *conjugal chastity*" (to Eedicia).

CHEMICAL BASIS OF SEX. In a strict sense the Chemical Basis of Sex can only be written at some time in the future. Present knowledge with actual bearing on the subject lies in such diverse fields of a highly differentiated modern biology as to be rather generally unrecognized, or to have its parts handled only as discrete pieces. In this article an attempt is made to put the main aspects of the subject, without detail, into one frame. It is convenient to treat selected parts of the available material under four headings, but this aid to writing should provide no warrant for piecemeal thinking on the subject.

THE MOLECULAR GENE AND SEX

Genes are so related to the normal basis of sex that a logical consideration of sexuality must begin with them. Genes rather than chromosomes (Bridges) provide the basis for that element of difference which normally so equips two types of fertilized eggs (Zygotes) that one type will develop into males, the other into females. Chromosomes usually bear many genes with influence on sex development in both directions; in each zygote, however, there is normally a *preponderance* of genes for one or the other sex type. Nevertheless, in some cases a single gene appears to have unusual and essentially decisive power over prospective sexuality.

Genes have this primary relation to sex, but how closely may we approach their chemistry? A reply may await or follow the observation that some recent discussion—not experiment—has conceived of genes doing their work through the building of enzymes, and others have thought of the gene as itself an enzyme. The question of the molecular nature of genes may now be considered in a statement intended to deal also with the question of gene-enzyme relationships. In this matter deduction far exceeds demonstration, but logically the thing

that can be said most safely about the gene—apart from the fact that it exists, has a locus, and occasionally mutates—is that normally the gene exactly duplicates itself between cell divisions. This wholly exact duplication necessarily implies that the gene has a very precise molecular structure.

Again, it would appear that nothing except that precise molecular structure should be or can be called a gene. When so conceived it seems quite impossible for the gene alone—apart from other living (though non-genic) and non-living adjacent material—to duplicate itself as we know it does. For such precise duplication the adjacent living and non-living substrate must not only provide the right kind and number of atoms for the duplication, but also provide a succession of specific conditions which will permit the final synthesis of a large complex and very specific organic molecule.

Among these numerous materials and specific conditions which lead to the building of a new gene it is entirely probable that there are enzymes. Perhaps therefore as good a case can be made for the proposition that enzymes help to build genes as for the view that genes help to build enzymes.

The probable size of a gene molecule in a fruit fly (*D. melanogaster*) has been calculated as 20–70 $\mu\mu$, or a size comparable to that of bacteriophage (Alexander and Bridges). Since it exhibits so many properties of living substance the gene is probably a nitrogenous or protein-like molecule. Since change in genic molecular structure is not involved in the cases of *change* of sex to be discussed later in this article it is well here to note a high probability that those agents which bring about sex-reversals do so by acting upon or through extragenic things—probably some of those "specific conditions" which are noted above as essential for a duplication of the gene itself. Again, it is notable that sex or sexuality is a *developmental* result or product—not a thing already existing or resident in genes or chromo-

somes—and that under unusual and often controllable conditions one and the same complex of genes may at different times be associated with either sex.

ENERGETICS OF SEX

An approach has been made toward knowledge of this aspect of sexuality. Observational studies have indicated some species—both plants and animals—which cyclically and repeatedly change from one sex to another. Among animals some species of oyster provide well studied examples (Orton, Spärck, Coe). The temperature (or seasonal) factors involved in these cases, though providing a clue to controllability and causation of sex change, provide uncertain data concerning mechanisms or intimate internal change. Few things have more, and also more incongruous, effects at one or another point in living tissue than has temperature.

With ova obtained from suitably mated doves and pigeons it has been demonstrated that oxidation rate or intensity is differentially associated with groups of such ova of prospectively different sexuality (Riddle). Considered as groups, male-producing ova store less energy (burn more of ingested matter) than do groups of female-producing ova. That this same sex difference persists throughout the life cycle in higher animals is made probable by results from the several species whose basal metabolic rate have been adequately measured. In some lower plants and animals showing sex differentiation various stages of the life cycle have shown a like differentiation in oxidation intensity (Joyet-Lavergne). A detailed consideration—beyond the scope of this article—of certain of the more informative cases of sex reversal also provides evidence that those reversals were effected through enforced and prolonged change in oxidation rate (Riddle). It is obvious that the alternative sexuality which depends upon one or another set of genes may ultimately rest upon precisely the same basis—each genic group pro-

viding early and continuous influence for a lower or for a higher level of cellular oxidation.

CHEMISTRY OF SEX HORMONES

During the last few years the chemistry of the sex hormones has been successfully investigated. Initially a close structural relationship between sterols and bile acids was demonstrated (Windaus and Neukirchen). Though it was previously suspected, only in 1933 did Butenandt prove that structurally the sex hormones belong to this same group of compounds. Others have shown that various unsaturated hydrocarbons with a similar ring structure have carcinogenic properties (Cook).

Three chemically different “female sex hormones” (oestrone, oestriol, and a dihydro derivative of oestrone, all having similar oestrogenic action, and one corpus luteum hormone (progesterone) have been isolated from female tissue. Three other oestrogenic compounds have been found in mares’ urine (Girard). Similarly more than one male sex hormone (androsterone), stimulating male secondary sex characters, have been found. (Koch and Gallagher; Ruzicka; Butenandt.) The sex hormones (see figures) all have a cyclopentanaphenanthrene four-ring structure and they differ but little in degree of oxidation, unsaturation, side chains and stereoisomeric configuration. The now accepted four-ring configuration of the sex hormones was proposed in 1933 (Marrian and Haslewood).

Oestrone (estrin, theelin, folliculin, menformon, progynon), an unsaturated hydroxyketone, was first isolated from urine (Doisy; Butenandt; Marrian; Dingemane and Laquer). Oestriol (theelol, emmenin), a trihydroxy compound from urine was isolated soon afterward (Marrian; Browne) and it was then proved that oestriol could be converted into oestrone by dehydration in vacuo with potassium bisulfate (Butenandt and Hildebrandt). By hydrogenation Schwenk and Hildebrandt obtained a dihydro derivative of oestrone, through reduction of the ketone

group to a secondary alcohol, the compound proving six times more potent than oestrone. The same substance has recently been isolated from liquor folliculi, thus providing evidence that it is the true form of the ovarian hormone (MacCorquodale, Thayer and Doisy). Oestrone and oestriol from urine therefore appear to be oxidation products of the true female sex hormone as this is prepared by certain cells of the ovary.

Progesterone (progestin), an unsaturated diketone, was isolated by Allen and Corner; Fels and Slotta; Fevold and Ilisaw. Its structure has been fully established (Butenandt; Wintersteiner and Allen; Slotta, Ruschig and Fels; Hartman and Wettstein). By converting pregnandiol (a physiologically inactive by-product from pregnant urine) and stigmasterol (a sterol from plants) into progesterone its chemical nature was definitely established (Butenandt).

Androsterone, a saturated hydroxy-ketone, was isolated in crystalline form by Butenandt, who proposed its structure as now known in 1933. Androsterone was prepared artificially from epidihydrocholesterol by Ruzicka, thereby establishing its chemical relationship to the sterols.

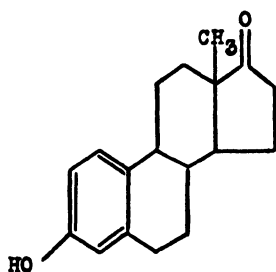
Sterols are believed to be essential constituents of the living cell, and are therefore even more widely distributed in living things than is sexuality. The artificial preparation of these sex hormones from sterols suggests that *in vivo* they are intermediary metabolites or derivatives of sterols. Certain differen-

tiated cells in ovary and testis (perhaps also placenta) apparently have the power to make these conversions. In the female, oestrone and oestriol seem to be oxidation products of the hormone actually produced by the ovary. Estrogenic substances have been obtained from such diverse sources as: ovary, placenta, blood, male and female urine, feces, bile, testes, potato, plant seeds, yeast, butterflies, and petroleum.

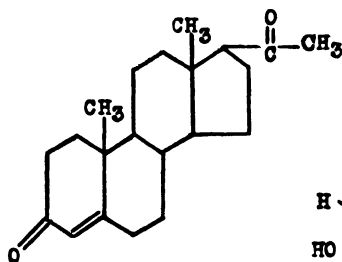
Substances having action on secondary sex characters of the male probably have equally wide distribution in living matter, but extensive tests have not been made. The occurrence of male hormone in female tissues and excreta, and of female hormone in male tissues and excreta, is proof that both hormones are produced in both sexes but in quite different proportions.

OESTRONE AND ANDROSTERONE IN SEX-REVERSAL

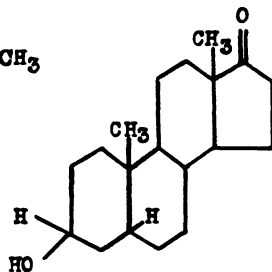
Early studies readily showed that replacement of ovary by testis, and the reverse, is capable of bringing profound change to the sexuality of individuals (of many species) thus operated (Steinach, Sand, Lipschutz). In such cases, however, the removed gland and the implanted gland were complex organs, and special importance attaches to the action of a chemically pure hormone of one sex when this is administered to an animal of the opposite sex retaining its own gonad and otherwise in a normal state. The matter assumes high importance once it is indicated that one such



Oestrone



STRUCTURE OF SEX HORMONES

Progesterone
 $C_{21}H_{30}O_2$ Androsterone
 $C_{19}H_{30}O_2$

hormone (oestrone) administered from very early embryonic life can overcome or reverse the sex type predicated by the genic type.

Sex reversal during early development is of special significance; the reversal can then be quite complete, and the conditions attending reversal are particularly favorable for study. Probably the first experimental cases in which oestrone was involved in change from male-to-female were obtained in doves under enforced rapid egg-laying (reproductive overwork) by Riddle (1912-1918)—who, however, could not then know that oestrone played a significant part. Part of the excess of females thus obtained doubtless arose not from sex reversal, but through a differential effect on the maturation (genic distribution) of ova. Under such reproductive overwork it was later found (1923-1930) that the eggs formed were being subjected (from the maternal blood) to unusual quantities of a series of substances: ovarian hormone, calcium, sugar, lipoid phosphorus, phosphatides and neutral fat (Riddle).

The recent studies of Kozelka and Gallagher, of Breneman, and of Willier, Gallagher and Koch, have shown that a single injection of oestrone (or of oestriol) into the albumen of the hen's egg after being incubated 24 hours results by the nineteenth day in a conversion of the left testis of many males into an ovo-testis, with persistence of oviducts. This treatment does not obviously affect the ovaries of the normal female chick.

In similar tests the first and last-mentioned investigators find that male hormone (androsterone?) obtained from bull testis produces no observable effect on the gonads or oviducts of either sex. But similar amounts of androsterone obtained from human urine have the remarkable property of inducing development of some ovarian tissue in the left (not the right) testis, and of inhibiting oviducal development in females. Though further study must supply adequate interpretation of these results—with a

possibility that the chick embryo is able to convert part of the androsterone to a female sex hormone—it is made probable that pure sex hormone is capable (whatever the mechanism involved) of affecting the embryonic development of the gonad itself. If this is true a more remarkable action of a hormone could scarcely be found, since here—at a sufficiently early stage of testis differentiation—oestrone is capable of overriding the genic influence for maleness, and femaleness is made to develop in its stead.

O. R.; R. W. B.

CHILDBIRTH. According to Robert Barnes (London), "Gestation tests the integrity of every structure of the body," and before him François Mauriceau (Paris) likened the period of gestation to "a disease of nine months' duration." Pregnancy is not a disease but rather an approachment upon disease: it is a physiological process narrowly bordering upon the pathological. The changes which occur in the maternal organism as a preparation for parturition may for convenience be divided between the general and the local.

GENERAL CHANGES

Profound changes occur in the metabolism of the pregnant woman. There is usually loss of body weight in the early months and an increase in the late months, due to increased assimilation and to the presence of the enlarged uterus with its fetal contents. The increase in weight should not exceed twenty-five pounds. Where the added weight exceeds this limit there is concern for the mother's safety.

Digestive Tract. Disturbances of the digestive tract are common; nausea is present in the early months of pregnancy in about half the cases and constipation is the rule. Craving for foodstuffs that are most unusual is characteristic of pregnant women, and in the latter months of gestation the appetite increases to supply the demands of the advancing pregnancy. The glycolytic function of the liver is less-

ened and degenerative changes may develop in the liver. There is an increased secretion of saliva and when excessive and frothy is referred to as "cotton spitting."

The Blood. The changes in the blood are not constant and have been subject to contradictory interpretations by many observers. The leucocyte count increases shortly before labor and persists into the early days of the puerperium. The red cells are moderately increased in number. The presence of protective ferments in the blood has been claimed by Abderhalden and other observers. These ferments, it is contended, destroy the placental proteids which find their way into the blood. Nothing definite has as yet come from these observations but the field is open for further study. The increase in fibrin is a protective measure designed to fortify against undue loss of blood in labor. The total amount of blood in the body is increased to provide for the needs of the baby.

The Heart and Circulation. Strain is placed upon the heart in the latter months of gestation that may well cause a moderate degree of hypertrophy. Stagnation of the venous circulation is noted in the presence of varicosities in the lower extremities and in the frequent development of hemorrhoids. Edema is often associated with varices of the legs. A rise in blood pressure at any time in the course of pregnancy is indicative of toxemia.

Renal System. Frequency of urination is an early manifestation in pregnancy and is quite troublesome in the latter weeks. The total quantity of the urine is slightly increased, perhaps by one-fourth, but the solid constituents are diminished. Small quantities of albumen and sugar may be found in the urine without apparent pathological significance, though calling for careful observation.

Nervous System. Forebodings and depression commonly plague the woman in the early months and later give way to a happy expectation. Pregnant

women are impressionable and much given to forebodings and occasionally develop alarming psychoses.

Ductless Glands. It is believed that pregnancy is accompanied by an hyperfunction of all ductless glands. The thyroid enlarges probably as a result of an increased demand for the secretions of the gland. Not only the thyroid but the suprarenal, pituitary, thymus, pineal and parathyroid glands have been found enlarged in postmortem examinations on the bodies of pregnant women. What the significance of this hypertrophy of the ductless glands may be is a matter of conjecture, but it is highly probable that it has to do with the systemic and local changes in the maternal organism.

Bones and Teeth. The sacro-iliac joints loosen slightly but as a rule this mobility is too slight to occasion inconvenience. The teeth are likely to soften during pregnancy and bring on speedy decay. It is an old saying: "For every child a tooth."

LOCAL CHANGES

The most remarkable of the local changes are found in the *uterus*. To accommodate the rapidly growing ovum the uterus increases in its capacity from five hundred to a thousand times (Johnstone), and the weight of the organ is increased about thirty-fold. The walls of the uterus thicken from increase in size and number of their muscular elements in the early months and become thinner in the later months from over-distention occasioned by the growing ovum. The individual fibres become greatly elongated and thickened. The blood vessels in the wall of the uterus share in this overgrowth; they become more tortuous and at the placental site they enlarge into great spaces known as sinuses. Likewise the lymphatics increase enormously in size and communicate freely with the peritoneal surface.

The changes in the endometrium are characteristic; these changes are ones of hypertrophy of the glands, blood vessels and lymphatics, together with an hypertrophy and

hyperplasia of the connective tissue to form the so-called decidual cells. As the pregnancy advances the uterus softens and becomes more and more elastic to the touch. This change in consistency is first observed in the lower uterine segment and cervix and is of diagnostic importance in determining an early pregnancy. As a result of increased vascularity the cervix softens and deepens in color. These changes are manifested early about the external os and constitute a valuable guide to diagnosis. As the pregnancy advances there is a marked thinning of the uterus just above the cervix; this is the lower uterine segment.

The shape of the uterus varies as pregnancy advances. In the first month it maintains its flattened pyriform shape, in the following few months it becomes spherical and because of the softening of the lower uterine segment the uterus becomes anteflexed. By the fourth or fifth month the uterus resumes its spherical form and in the late months the transverse diameter is increased beyond that of the antero-posterior diameter.

The nerves of the uterus increase in size as do the ganglia about the uterus. This hypertrophy of the nerve elements is accompanied by an increased irritability of the uterus.

In primipara the cervix dilates from above downward while in multipara it dilates from below upward. In the last two weeks of pregnancy the cervix shortens. This shortening is due in part to the contraction of the longitudinal fibres of the uterus but in greater part to the participation of the upper portion of the cervix in the formation of the lower uterine segment.

The tubes and ovaries display a marked vascularity and in the ovary is the greatly enlarged corpus luteum. The vaginal walls become deeply congested and softened, and the pelvic floor sags in the latter weeks of pregnancy. The breasts enlarge progressively throughout the period of gestation, the nipples and areola become pigmented, the glands in the areola stand out prominently and the veins are revealed in bluish lines. In the latter half of pregnancy the breasts secrete a thin, fatty emulsion called colostrum.

Supporting Ligaments. The round ligaments, the broad ligaments and the

utero-sacral ligaments lengthen and hypertrophy in the course of pregnancy. At the completion of labor they retract and resume their function in the support of the uterus.

PHYSIOLOGY OF PREGNANCY

Conception. There is no mating season for the human species, such as exists in lower animals. Conception may take place at any time in the menstrual cycle though the most favorable time is about one week after the cessation of the menstrual flow. Fertilization of the ovum may occur at any point from the bursted follicle to the cavity of the uterus but it is generally agreed that the most common site is in the outer third of the Fallopian tube. The interval between sexual mating and fertilization is variable. It is contended that the sperm cannot live more than forty-eight hours within the genital passage, yet Bannister cites the case of a woman who had been confined in the ward for three weeks and when operated on living spermatozoa were found in the tubes.

Childbearing Period. The usual period of childbearing is from eighteen to forty-five though babies have been born earlier and later. There are mothers but nine years of age and childbirth has occurred as late as the fifty-fifth year.

Duration of Pregnancy. The average duration of pregnancy is 275 to 280 days, but the law recognizes the legality of a full term birth 207 days after marriage. In estimating the date of expected confinement the usual procedure is to start with the first day of the last menstrual period, count back three months and add seven days. A more laborious method is to count forward 280 days from the beginning of the last menstrual period.

As a check on these calculations the height of the fundus should be noted. At the third month the uterus should reach the level of the pubis, it should advance three finger breadths each four weeks, thus reaching the level of the umbilicus at the end of the twenty-fourth week, to near the end of the

ensiform cartilage at the thirty-sixth week and back three finger breadths near the time of labor.

A less reliable guide in reckoning the time of confinement is the date of "quickening." Counting forward twenty-two weeks from the time the mother first notices the movements of the baby will afford only an approximate estimate of the time of confinement. The method is of value when the menstrual periods have been irregular or conception has occurred during the period of lactation. If two or all three of these procedures correspond closely one may predict the time of confinement with some degree of confidence.

Signs and Symptoms of Pregnancy. For convenience the normal duration of gestation will be divided into three periods; the forty weeks or ten lunar months which comprise the duration of gestation, will be subdivided, using Bannister's classification, as follows: (1) Early pregnancy, first to twelve weeks; (2) Mid-pregnancy, twelve to twenty-eight weeks; (3) Late pregnancy, twenty-eight weeks to term.

EARLY PREGNANCY (FIRST TWELVE WEEKS)

Amenorrhea. The sudden cessation of the menstrual periods in a woman in the child-bearing period is highly presumptive evidence of pregnancy. This is particularly true if the menstrual periods have been regular. Some women, however, menstruate one or more times after the onset of pregnancy.

Morning Sickness. Nausea and vomiting occur in about half the cases. Women of unstable nervous equilibrium are more apt to suffer from a "disturbed" stomach. When the nausea and vomiting are greatly prolonged the disorder is commonly ascribed to a toxic condition in which there are grave possibilities.

Frequency of Micturition. There is an increase in the output of the kidneys in the early weeks of pregnancy which, together with encroachment of the enlarging uterus, the congestion of the bladder and the hyper-acidity of the urine, causes the woman to void frequently.

Breasts. Early in pregnancy the woman commonly complains of tingling and sensitiveness of the breasts. As a rule there is a sense of fullness but no definite enlargement is observed prior to the eighth week.

Miscellaneous Symptoms. Constipation is a frequent accompaniment of pregnancy in the early weeks. Fainting, shortness of breath and a craving for unusual articles of diet are common experiences in the early weeks of pregnancy.

On physical examination it is not possible to arrive at a positive diagnosis of pregnancy by the sixth week save in exceptional circumstances. A much earlier diagnosis may be arrived at by resort to certain laboratory tests.

Changes in the Breasts. The breasts are tender and tense, the nipples stand out prominently unless unnaturally depressed, the areola becomes increasingly pigmented in brunettes, less so in blondes. The glands of Montgomery in the areola stand out prominently and may be felt like shot under the skin. As a rule there is no secretion expressed from the nipple.

Pigmentation. The areola becomes pigmented and as the pregnancy advances a strip of pigmentation develops along the midline of the abdomen and the forehead.

Vagina and Cervix. The vaginal walls and the vaginal portion of the cervix soften and take on a bluish cast. The most characteristic sign is that of Hegar and is described as a softening and compressibility of the supravaginal portion of the cervix. This sign is recognized on bimanual examination and constitutes one of the most dependable of the early signs of pregnancy.

The Body. As the pregnancy advances the body of the uterus enlarges progressively and at the same time it softens but to a lesser degree than does the lower uterine segment. By the sixth to the eighth week the uterus becomes pyriform due to an increase in the antero-posterior diameter and by the end of

the twelfth week it has reached the level of the symphysis, provided the uterus is in the usual anteflexed position.

MID-PREGNANCY (TWELVE TO TWENTY-EIGHT WEEKS)

At the end of the twelfth week the uterus rises out of the pelvis and from then on it can be palpated through the abdominal wall.

Symptoms. Amenorrhea persists and nausea and vomiting usually subside, the breasts become increasingly heavy and frequency of urination continues to annoy. From the eighteenth to the twentieth week the movements of the baby are manifest; first as the fluttering of a bird in the hand, later as light taps. These movements are not always interpreted by the mother and may not be felt until a much later time.

Signs. Pigmentation deepens about the nipples, on the abdomen and the face. The veins in the breasts stand out more prominently as do the glands of Montgomery. By the sixteenth week a clear secretion can be expressed from the nipples. The abdomen becomes more and more prominent as the growing uterus rises into the abdominal cavity. The rate of ascent is about one inch each four weeks. Intermittent uterine contractions can be elicited after the twenty-fourth week by laying the hands upon the abdomen.

By the time the fundus has reached the level of the umbilicus (24th week) the uterine souffle can be heard as a blowing sound, synchronous with the maternal heart beat. At the same time external ballottement can be elicited by percussing the abdomen, thus displacing the fetus in the liquor amnii and feeling its impact upon the hand laid upon the abdomen. Fetal heart tones should be heard by the twenty-fourth week. They are not unlike the ticking of a watch under a pillow and are at the rate of 140 to 160 per minute. At this time they are best heard about two inches above the symphysis. Active and passive fetal movements

and the hearing of the heart beats are positive signs of pregnancy.

On vaginal inspection discoloration and softening of the walls of the vagina and cervix are more marked. By moving the examining finger sharply upward the impact of the fetus may be felt by the hand above the symphysis—this is internal ballottement, one of the positive signs of pregnancy.

LATE PREGNANCY (TWENTY-EIGHT WEEKS TO TERM)

Symptoms. The fetal movements become stronger with the advance of pregnancy and may be very disturbing. There is shortness of breath upon exertion until the thirty-sixth or thirty-eighth week when the uterus sinks lower into the pelvis ("lightening").

With "lightening" the breathing becomes less labored and there is no longer the sense of fullness after eating. The expectant mother walks with a straggling gait and the pressure upon the bladder brings on greater frequency of micturition due to the sinking of the presenting part of the fetus into the pelvis.

Interference with the return flow of blood through the veins brings on varicosities in the lower extremities, and sometimes in the rectum (hemorrhoids). Under such conditions there may be swelling of the lower extremities and the vulva. Sudden, shooting pains in the legs and cramps of the muscles of the legs and feet are troublesome features of late pregnancy and are presumed to be caused by pressure on the lumbo-sacral nerve trunks and the sacral plexus.

Signs. By the thirty-sixth week the fundus is near the end of the ensiform cartilage and in the following four weeks it descends three finger breadths. This is true of primiparae while in multiparae the descent does not usually occur until the thirty-eighth week. The fetal heart is more distinctly heard and varies in its location with the position of the baby. Ballottement becomes

difficult to elicit in the late weeks because the fetus fills the uterus so completely. On vaginal examination the presenting part of the baby fills the pelvis and is more or less fixed in its position. There is deep discoloration of the vaginal mucosa and cervix together with an abundant discharge of mucous. The cervix is drawn upward and backward and may be felt with difficulty because of its softness.

LABOR.

The question is often asked: what incites the uterus to contract at the appointed time? Only theories are propounded in explanation of the phenomenon but no satisfactory explanation has been forthcoming. The ancients were sorely perplexed with the problem; they taught that birth took place when the membranes became too small to accommodate the growing child and when the blood supply became insufficient. It was the child that propelled itself into the outer world. Even Harvey, who laid the foundation for modern obstetrics by his anatomical researches, wrote that labor comes on when the "juices" (waters) fail to provide nourishment for the baby. He believed that "the head of the baby attacked the portals of the womb, opened them by its own energies and thus struggled into day."

The onset of labor is often imperceptible. In the prodromal stage of labor the symptoms are not pronounced and may not be noticed. At this time there is a discharge of mucus from the vagina, there is an increased pressure in the pelvis which gives rise to a more frequent desire to urinate and there is a sense of relief in the epigastrium as the uterus settles down to a lower level. "False pains" may disturb the sleep in the latter weeks of pregnancy and as the time of labor approaches, the uterus, with a periodical tightening, becomes more irritable. These contractions are not sufficiently strong actually to cause pain. Only when the mother is sensible to the uterine contractions can we say that labor has set in. A day or two before labor sets in the "show" appears in the form of blood-stained mucus.

Labor is divided into three stages: the first beginning with the onset of

painful contractions and ending with the complete dilatation of the cervix; the second ends with the birth of the child and the third with the expulsion of the afterbirth and the contraction of the uterus. Throughout the entire labor there is pain unless relieved by the administration of an anesthetic or analgesic. These pains are caused by the contractions of the uterus but it is not known why the muscular contractions of the uterus should cause pain when there is no pain elsewhere in the body arising from the contractions of involuntary muscle fibres.

The duration of labor is variable. The primitive races gave birth quickly and with comparative ease. With advancing civilization labor became more prolonged and difficult. Primitive peoples of to-day live under conditions which permit of perfect freedom of action; they are unhampered by the restraints of society which weaken their physical powers, and as a rule there is no disproportion between the head of the child and the mother's pelvis. Furthermore, it is assumed that malpositions of the baby are less frequent among primitive races because of their active out-of-door life. Among civilized people, marriage brings about differences in physical make-up which result in a disproportion between the child and the mother's pelvis, and the dissipating habits of society weaken the forces of labor and so the modern woman pays the price for a life of luxury and ease. In verification of this hypothesis the working class usually give birth with comparative ease and those who live in the country have shorter labors than the urban group.

MECHANISM OF LABOR

First Stage.—The cervix softens in preparation for labor; this is due to serous infiltration of the tissues. With the onset of labor pains the ovum advances in the direction of least resistance; it is impelled downward in the direction of the long axis of the uterus. As the first stage of labor proceeds, the advancing fetus dilates the cervix and at the end of this stage the cervix is completely

effaced and the fetus presents at the external os. In primipara the cervix may be obliterated with the fetus resting on the external os four to six weeks before the onset of labor. The bag of waters forms in advance of the presenting part of the head and with each succeeding contraction of the uterus it is forced through the cervix into the vagina. Ultimately tension gives way and the membranes rupture thus permitting the amniotic fluid to escape.

Second Stage.—In head presentations, at the beginning of the second stage of labor, we commonly find the head lying more or less transversely at the brim of the pelvis with the occiput directed to the left or somewhat less frequently to the right. As labor progresses the occiput swings to the front and at the same time the child's head becomes flexed on the body. This flexion of the head permits its smallest available diameter to engage in the birth canal and the occipital pole becomes the lowest portion or advancing wedge. As the head advances the pelvic floor forms a gutter into which the head of the baby sinks and by which it is made to rotate to the median line. Thus the antero-posterior diameter of the baby's head is brought in line with the antero-posterior diameter of the pelvic outlet. Failure of the head to properly rotate slows up labor.

With the head perfectly flexed and lying in the midline on the pelvic floor the force of the uterine contractions causes the head to extend, thus stripping the face of the child over the pelvic floor and allowing the exit of the entire head. With the delivery of the head the shoulders are found to occupy the oblique diameter of the pelvis with the anterior shoulder lowermost. The advancing shoulder rotates forward and passes under the symphysis pubis thereby bringing the shoulders in line with the antero-posterior diameter of the pelvic outlet in the same manner as in the case of the head. With the delivery of the shoulders the remaining parts readily follow. Such, in brief, is the mechanism of labor in the usual head presentations.

Third Stage.—The placenta and the attached membranes separate from their attachments to the uterine wall. This separation is brought about by the contractions of the uterus following the delivery of the child. The loosening of the placenta is the result of a lessening of the area of the placental site. As a rule it is the central portion that first separates, leaving a space into which the blood escapes. This pent-up blood forms a wedge which aids in the further separation of the placenta. Eventually the entire placenta is stripped from the uterine wall and is expelled from the uterus. As the placenta enters the vagina the fetal surface presents and with the aid of the attendant it is readily

extracted by gentle traction on the cord combined with compression from above. Not until the uterus has firmly contracted and retracted is the third stage of labor completed.

Puerperium.—Now follows the lying-in period which lasts a variable time. From a scientific standpoint the puerperium does not end until the generative organs have returned to their normal condition; this as a rule is accomplished in six to eight weeks. The responsibilities of the obstetrician do not end until the mother and babe are sound and well.

P. F.

CHILDREN, SEXUAL BEHAVIOR

OF. The proper way, perhaps, to present this material, psychologic and psychiatric, is on its broadest hedonistic basis—on the prevailing pleasure-pain, pleasantness-unpleasantness, satisfaction-dissatisfaction balance, universal, so far as we know, in living animal organisms: they seek the one and shun the other. The ground of this in turn goes back even to the final purpose of our kind of life in the Creation. Naturally, in this case, we start much further "up," namely in the certain psycho-biological principle that each of us seeks "pleasure" and shuns "pain," but always with the necessary exception that *satisfaction*, perhaps quite out of the affect's range, may commonly void the action of the hedonistic theory, so that apparently it is not effective. For example, a man who has certain arbitrary ideas, even such as are abhorrent to the great mass of men, may prefer, as so many have preferred, even to be flayed or burned slowly at the stake, rather than to abandon or to change these arbitrary notions born of their experience.

There is another proviso, too, to this bald pleasure-pain principle of animal life, namely, that pain and pleasure here are deemed to be sensations, not feelings of unpleasantness and pleasantness. It is only at or near puberty that these two begin to complement each other fully, merging at length in normal folk in the perfect sexual mental synthesis. Most of our satisfying experiences are compounded of both pleasurable sensation and agreeable feeling, the former the direct concomitant of the normal stimulation of receptors or sense-organs, the latter the stheneuphoric action of more or less of the whole body unified by means of the nerves, the muscles, the circulation and the endocrines. This distinction needs be kept in mind in any consideration of childhood-sexuality.

Nearly all of the earliest sexual behavior were sporadic only, casual, occasional, usually unimportant, were it not for the obvious fact that this particular group of behavior-units, even

though practically universal as some say, taps inevitably one of the two most basal interests of life: individual nutrition and racial perpetuation. This behavior, in short, from its beginning at the early phases of voluntary control, finds direct and certain sensory pleasure of some degree or other in its practice. Besides, it provides the more or less subconscious satisfaction of none the less effective or even powerful affective "drives," basally sexual, of hugging, kissing, comforting, feeding, warming, bathing, by parents, nurses, siblings, and friends. All the reactions to these actions, and often to some more evil and directly sexual, give to the ever- and sometimes over-vigilant sexual nexus of the normal child pleasure or habit-satisfaction at least, and so tend to be sought after and habituated—a prime law of behavior with personal reward in this case far exceeding that of contact-stimulation elsewhere, for example in the mouth-cavity. The breasts, e.g., are sexual as well as nutritive organs.

Another urge of sorts to childhood sex-experience throughout the human race, and perhaps in all the primates, depends on obvious mechanical morphology. As the evolving child's intelligence unrolls the invaluable curiosity inevitably leads the child to explore its body as its new-found power of voluntary movement extends from the hands elsewhere. Here, again, some of this exploration receives direct hedonistic reward. But aside from that, perhaps in little boys especially, a well-developed mechanical curiosity leads the little child to see how things "work," and kinesthesia, if nothing else, leads to some satisfaction in trying things out. Less frequently owing to obvious anatomic reticence or even concealment, the uninformed, unawed, unthreatened little girl (as a beginning of the feminine curiosity?) explores her organs with greatly varying degrees of thoroughness. This, in intelligent children, is all the more certain to happen, and in girls there is the common added in-

stinct to explore crevices and openings not too tightly closed.

Despite this, it is a rather conspicuous fact, as all gynecologists and most psychiatrists know, that comparatively few uninstructed girls, big or little, young or old, know practically anything about the vagina, even in this "enlightening age." It is well-closed usually, and, unless infection *via* uncleanness, or worse, leads to its treatment, it is only at ten or twelve years or later that it just begins to demand from the well-sexed girl its normal adolescent and adult notice, and rarely not then. About eleven usually, or later in cold latitudes, vague sensations and increasing activity of secretion at least begin to announce not only "the soul's awakening," but the female body's principle and characteristic focus, if we may presume to go so far. Usually the highly intelligent (curious) girl, of course, long before that age, has subconsciously or more clearly realized that thence their presumed (and often longed-for!) future babies must have their exit from the body, inconceivable as the usual anatomic closed condition forces it to be.

But on all sides one gets evidence aplenty, even nowadays, that many young women know nothing whatever of the often dominating purport or use of their external sexual organs including the breasts; their vaginas very often continue mysterious to them, to their severe detriment perhaps after marriage, especially when their mates are as absurdly ignorant as themselves. It is obvious that the information that should be bestowed in every adequate birth-control station or clinic is deemed by the present writer indispensable to every girl (and boy) of marriageable age. To keep such basal facts from them is little short of a bitter crime against the ideals of a progressive civilization, a disgrace to public "education."

When country-boys and those in the small towns get old enough to go in casual gangs, e.g., to swimming-holes, it is certain that very many of them compare the sizes of their penes, with the

hope of gloating over each other, just as they compare their stamps, marbles and other toys. And little girls, with far less opportunities, in some cases have homologous but more recondite habits of social intercourse which some of our Freudian friends could (and do) describe, sometimes in needlessly great detail. It may not be doubted, I think, that of late years the frequency of this sort of thing has much increased, with the frequently expressed result that children of 9 or 10 to-day know more about sexuality in its simpler phases at least than the majority of young adults knew a generation or two ago. Of this we may be glad.

Here is one place where the much-deprecated only child has an advantage even when given its necessary chance of plenty of playmates, in that he or she is not quite so apt to become blasé to sex before marriage—if the term blasé be applicable to sexuality at all in a normal person properly informed as to its deep significance and dignity.

Of one thing the present writer is quite convinced: every normal child is curious as to sexuality in proportion: as it feels the latter's transcendent interest; to his or her intelligence; to his or her vigor; and to his or her opportunity for developing or acquiring the necessary preliminary data. Under the appropriate conditions, then, generally speaking, no child over 7 or 8 is apt to remain long with a child of the opposite sex in a place thought fully safe from interruption, without making efforts, perhaps only verbal at first, to investigate and familiarize. The writer would take such efforts for granted as part of normally intelligent human nature. And once begun, this curiosity and its urge develop in high progression.

None the less, it would be easy enough to exaggerate the universality and the commonness of heterosexual experience between the ages of, say, 5 and 11. Undoubtedly boys play together, girls play together, and boys and girls sometimes play together with the most complete opportunity without showing any overt

sign of sexual curiosity whatever. Puberty is indeed the soul's first awakening for numerous girls and boys for whom its sleep is profound until then. There certainly are a good many "Evelyn Hopes" still among us. In short, a relatively very few boys and girls are fortunate enough to develop little or no sex-feeling, conscious or subconscious, no sex-curiosity, no sex-interest. One can scarcely help supposing that this, other things equal, is an advantage to them. It is in the way of a well-ordered life-course, "one thing at a time and that done well"; and it makes for freedom from care and vague apprehensions sometimes. In this way they get the most out of their precious childhood, perhaps not more happy. But at puberty and beyond they run more of the inevitable risk, greater for the girls, coming not infrequently solely from mental (intellectual and affective) unpreparedness.

In this connection, psychic contrectation, psychic masturbation, even psychic coitus, may not be ignored in our discussion. It is extremely common, this imaginary indulgence, leaves few evidences, needs little special opportunity and sometimes is very satisfying. In erethistic older children, as in adults, it is quite commonly capable of affording much sexual satisfaction. The "crushes" of very many innocent school-girls for their younger women-teachers are the basis of a curious and a suggestive aspect of this day-dreaming to which we can give no present attention and the literature is mostly adequate.

Psychologically, day-dreaming of a subconscious sort merges into, disguises itself in, relieves itself by dramatizations of familiar home-scenes, as play. Here, of course, we find frequently imitative realism carried to its logical limits, given opportunity, yet often without plainly conscious sex-feeling. The little boy or girl play keeping house, or doctor and patient; or the little boy (usually at his naïve companion's suggestion?) plays that he is a cow and his willing companion a milkmaid; or hus-

band or wife; or childbirth; the details and the realism of these plays depending on their knowledge, imagination, curiosity, strength of will, opportunity, etc. Only from individuals unashamed does one get proof of the frequency of such plays—they are done in secret, but they frequently are done.

One need not search far, however, among well brought-up adolescents to be certain that boys and girls, long companions at school, parties, picnics, church, knowing each other for happy years, frequently pass whole days together in the woods, in autos, in boats, and quite alone, unchaperoned, and with full opportunity, without even a thought perhaps literally of sexual contacts or of sexual talk. Habit comes in here to do its essential and important work in our lives. "Nice" boys and girls of 13, 14, 15, enjoy this brotherly and sisterly sort of visiting very commonly, even in this sophisticated age. Even a bit of petting, causing some local concretion, may lead no further. One recalls the bundling of the eighteenth and even the early part of the nineteenth centuries and understands better how it could have begun and grown into a custom even in the best regulated families and especially in the rural districts of Europe and of eastern America. But it too became sophisticated, and was suppressed as a danger to morality.

The inhibitory habit of knowing subconsciously, or otherwise automatically, "where to stop," has been the best fruit of the rational routine training throughout childhood, *via* mother-love, gratitude, religious taboos, respect for womanhood, self-respect, venereal fears, etc., and is of course greatly "to the good," the real aristocracy.

But, all the while beneath and around this fine restraint, subconscious or conscious, lies The Trap: summertime, the restless agitating ocean, the romantic moon, a gentle companion of the other sex, a secluded rocky nook, the forest, a secluded parlor room—who has not adolescent memories of such precious evenings or afternoons, and with never

a bit of harm to either party. But, again in the too-common mode at present, add a limousine or any car that can take the couple far into the woods, a few drinks, menstruation just ahead or just past, daring curious conscious ardent youth—and The Trap is all to apt to spring, catching these two happy children of Adam and Eve in its teeth, so old, yet so always strong and new! The world of unthinking folk is far too apt to overblame the male for the closing of The Trap, ignorant that in the female human, sexually sensitive and exciting areas are far more diffused over the body than in the human male; it is almost as if monogamy and female anatomy, physiology and psychology, were all too plainly at variance—as, of course, at heart they are.

It is most agreeable to believe that the loosening-up of the taboos on sexual knowledge conventionally so strong up to the beginning of the eugenics movement, is saving and more and more will save very numerous girls and boys from this trap arranged so wonderfully by Mother Nature for the more certain perpetuation of the race.

The average age at which masturbation is begun by children is largely determined by two variable circumstances—the age at which voluntary, deliberate, bodily use and control are developed; and the relative and more variable strength and sensitivity of the sexual feelings. The present writer is of the opinion that masturbation is practically universal at some time or other of every person's life, just as zoölogists assert that every known brute animal, that can mechanically accomplish the action required, masturbates when necessary.

In children the action may be accomplished at ten or twelve months and be given up, mostly, by the sixth or seventh year, following rational explanation from wise elders not too young. As already suggested, it probably is still more common, in their way, in little girls than in boys. In both sexes its continuance and amount must

remain an individual algebraic balance between many more or less compensating tendencies and conditions; sometimes its demands are irresistible.

Here as elsewhere there are social class-differences acting to some degree. Bodily uncleanness is undoubtedly important in continuing, as in starting, the habit. The irritation and itching due to old smegma and mildly infected vulva and vaginal secretions may start it, with a probability that the satisfaction and pleasure produced by attempts at their quietus will tend to perpetuate the secret contacts almost inevitably.

Nowadays one need no more than again mention what up to a generation ago was decidedly the chief source of harm from masturbation by girls and boys, young and older: namely, of course, *fear*. Worry, apprehension, terror, a feeling of deep inferiority, are bad enough to occasion mild psychoneuroses in multitudes of boys and girls, coming for the most part from age-long threats and taboos, and from corporal punishments. (And how many thousands of little girls have greatly enjoyed being spanked, especially by their fathers, this discipline working often to further, rather than to check, the habit). By the same cellular neuropathology that may frighten to death a rabbit, a little boy or girl may be made nervously, however mildly, ill. Punishment is never "indicated."

No average normal adult person is apt to teach children masturbation deliberately, unless it be the occasional nursery-maid using it as a sedative. But it must be recalled that a single good viewing of a little girl's vulva or of a big little boy's erect penis and testes, may begin an "obsession" in the mind and emotions of a child of the opposite sex that may last years on end as an always ready excitant. Exhibitionism to older girls may be a very surprisingly severe shock, unexplainable on any basis other than the all-pervading subconscious interest of sexuality.

Rare would be mutual masturbation or attempts at intercourse by children

younger than, say, 9 or 10 in civilized lands, unless the children sleep together in the same bed or room without any kind or danger of supervision or discovery. Among thoughtless parents (if any persist who still assume that sex-interest and desire arise only at puberty, and hence allow their children over 2 to sleep in their bedroom) there should be no surprise at all if the children attempt coitus whenever safe opportunity presents itself. This exciting process has far too much mysterious dramatic interest to it and, withal, lies too intimately close to the subconscious sexual instinct to be forgotten, or ignored, when once seen, and not described, tried out and discussed with any person who is not afraid. Adequate housing will help here if ever it comes for the mass of the people, whether in town or country. Nocturnal isolation, however, works both ways, which fact complicates this matter.

The present writer has never heard or noticed that the average amount of masturbation by young girls does any harm unless "discovery" leads to the fearful scaring of the child. After puberty, desire may at times be so impetuous however, and especially, if there has been heterosexual experience, that the clitoris and vagina are injured mildly in various minor ways. But such desire leading to such harm certainly is very rare before adolescence is far advanced toward womanhood.

As already has been suggested, baby boys who contract the mechanical habit in a half-hearted way, usually give it up in a very few years under the various subtle or frank discouragements forced on them by most adults. Under these circumstances it is not so apt to be revived before puberty and frequently never, specially when frowned on by the high ideals of the manly youth himself.

During adolescence, however, masturbation tends to perpetuate itself when done at all and to become a bad habit, and one ever more and more firmly fixed. Under these common circum-

stances, and in proportion to the frequency and the results, the vasomotor and other nerve-centers of erection are *debilitated*. This results frequently and importantly enough in impotence and in *ejaculatio praecox*, which uncorrected tend to be life-long.

How greatly and in fact how very frequently this condition interferes with happy married life, no keen adult of good insight needs to be told. A young woman who never has had coitus except under these conditions, so wretched for her if she be sexually normal, so "impossible" if she be of a passionate vigor, is slow to make serious (*i.e.*, divorce) objections. But a young woman who has had normal orgasmic intercourse by means of a vigorous and persisting penis, is fairly certain to seek in some way a strong "he-mate" who can satisfy her as her female nature really requires, if she is to escape sexual obsession and celibacy and live normally for other social aspects of life.

This male defect certainly underlies the commonest cause of female "frigidity" and wives' suits for divorce. Ask the divorce-court judges! Very few women are undersexed physiologically through inadequate hormonal basis. Frustration of intercourse because of lack of orgasm is a physiologic offense, almost a moral crime, against a wife, with ignorance, just bold, plain, inexcusable ignorance of psychology or else religious taboo on the part of her husband, or both of them, as its cause. Psychasthenia is the expected consequence and divorce the normal and natural result. This, still, in these sex-enlightening days, is one of life's most common and poignant dilemmas for very many women and men, far more of them than even the average physician realizes. And after a while the *causa vera* of this domestic tragedy becomes sometimes so deeply hidden in the mind of the chief victim that even she, especially if a modest and subservient conventional wife, may have seemingly forgotten its existence and origin.

And so very much of a married union's possible happiness has been forever missed. Only pertinent early knowledge can correct this wrong!

Homosexuality does not concern us much in our childhood's discussion proper, it being characteristic rather of adolescent mental disease (schizophrenia) and of adulthood's perversions. In like manner, sadism and masochism touch but rarely true childhood sexuality. The spanking of daughters is very apt to excite them sexually, but it is rather different from masochism properly so-called. But the spanker is sadistic (as well as cruel and unfatherly).

It seems proper to forefend any sceptics as to the commonness of sexual experiences among children by insisting that secrecy, unceasing secrecy, is the instinctive guide-word of all normal civilized children, just as certainly as it is nothing at all to the naked boys and girls and adolescents of most really savage races of whom only a few remain. To these latter, sexual play and intercourse is a mere commonplace of play from three years, say, onward, and virginity a disparagement to a bride, as is also their lack of motherhood prior to "engagement." We may argue from this entire absence of sexual restraint of any slightest degree among many of the *natural* children, its certain great frequency amongst their white siblings in America and in Europe. But hereabouts secrecy is the watch-word unexpressed, the behavior guide-word, product of a very few thousand years of growing taboos. For example, never has the writer, spending most of his life in large American cities, seen a single sexual contact either of self or others in a street or a park. Normal children's caution and vigilance against discovery are continuous and complete, and after a few years, fortunately for conventional public decency, becomes habituated and subconsciously carried out. This simple but obvious fact has misled and still misleads folk in general as to the sexuality of childhood. Years hence

perhaps reliable statistics may be available.

The writer has never heard an adult express regret at childhood life-practice plays unless he was a victim of religious taboos; or a man or woman who had been driven into pathological serious disability or depravity starting therein, unless developed in a constitutional inferiority of personal control. It is obvious that childhood experience need not be blamed for the dilapidation of character when this obtains, for it does not, decidedly not, follow in normal personalities. In the latter, these plays are part of her or his education, as all really appreciative persons must realize. Old prejudices, based in inadequate or false physiology, psychology, pedagogy, not to say in misleading and dogmatic casuistry, are one by one, or faster, giving place to a freer, richer, and more biological life, certainly not less "moral," dignified, and good.

In a few years more what by-gone lore will seem the white falsehoods of the "stork" type, still told to earnestly inquiring intelligent infants; as if pregnancy were a process to be ashamed of, and hence kept from young boys and girls; as if false and not true were the old wisdom-adage of the ages: To be forewarned is to be forearmed. Especially essential is this knowledge in respect to The Trap laid so universally and so deeply in the heart and mind and body of every adolescent by Mother Nature: "Life shall not die!"

Even the moral philosopher, the psychologist, the physiologist, the physician, does not see much of harm in this sort of anticipatory loving. As long as extrinsic infections do not enter the picture, it is only a natural and so more-or-less normal reversion to the natural primitive sexual status of early life. As Briffault, Ellis, and so many others have shown to be true beyond doubting, personal sexual modesty arose in humanity's more or less superficial behavior and emotional life only when the sexual mechanism was made conspicuous by the wearing of clothes primarily adopted for protection to an ever more and more tender and sensitive mechanism.

as on so many others in this pioneer encyclopedia, without exciting opposition and denial,

with accusation of immorality of belief and of teaching.

The writer admits he may be mistaken from the scientific viewpoint in some respects, from the social and personal welfare viewpoint, and even in some cases from the hedonistic and epicurean viewpoint. But even with these extensive-enough reservations and dangers well-realized, he can but express the same opinion that probably an intelligent member of an upper Congo tribe would hold to: that childhood sex-experiences, when normal in nature and amount and devoid of bodily injury, are a source in general of additional happiness, satisfaction, and wisdom, with the same useful function as other kinds of play. These memories (never forgot!) are sweet memories probably to the great majority of adults, and secretly unregretted.

The management or treatment of the worst conditions of this kind plainly is a task for the psychiatrist. Frank, complete, more or less casual enlightenment is usually all that is required for the others in proportion to their intelligence.

This contribution, plainly enough has omitted much that might have been included—case-histories not being referred to, the truly salacious part, if any, of most such literature. It has obviously not been hampered by ephemeral or narrow taboos, of the conventional kinds at least, traditional, religious, ethical, or hygienic. Its ideal, in its own small way and degree and manner, is the scientific truth as its writer sees it. But "What is truth?"

G. V. N. D.

CHROMOSOMES, SEX. Sex chromosomes are chromosomes that have a special relation to sex determination. The basis for this relation is, superficially at least, a rather simple one. In the cells of one sex there are present two sex chromosomes that are alike in their general constitution, that is they are homologous and constitute an equivalent pair. But in the opposite sex only one such chromosome is present, or else it has a partner that is not equivalent to it. The sex chromosome that is represented twice in one sex and only once in the other is designated as the X chromosome, while its non-homologous partner if present is termed the Y chromosome. In the great majority of forms it is the female that has two X chromosomes; whereas the formula for either XO or XY, depending on the species.

The mechanism through which sex

determination is accomplished involves both the maturation of the germ cells and the subsequent union of egg and sperm. Each germ cell before maturation (and also all the cells of the body not concerned with reproduction) carries ordinary chromosomes (autosomes) as well as sex chromosomes. The autosomes are normally always present in pairs, that is each autosome has one homologous partner in the same cell, and this resembles it not only in size and shape, but also in respect to the hereditary elements or genes that it carries (Fig. 1, a & b and 2, a & b). In the course of the maturation that takes place in the germ cells, all the partners are separated into different cells and the fully ripe germ cells (gametes)

sult, every mature egg carries only one X chromosome. But in the males, where only one X is available for distribution, only one out of every two cells can receive it (Fig. 1, c). Thus only half of the spermatozoa carry an X while the other half carries a Y

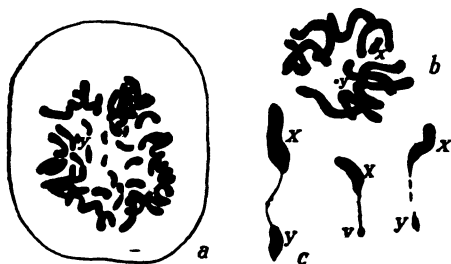


FIG. 2

a. The chromosomes of the human male showing 48 chromosomes before maturation. The Y is the smallest one, the X as one of the medium sized chromosomes not being distinguishable. (After Painter.) b. The chromosomes of the male of the kangaroo (*Macropus*), showing 5 pairs of autosomes and X and Y. (After Agar.) c. The sex chromosomes of the human male (*Homo*). (After Painter.) d. The sex chromosomes of the male Old World monkey (*Macacus*). (After Painter.) e. The sex chromosomes of the male horse (*Equus*). (After Painter.)

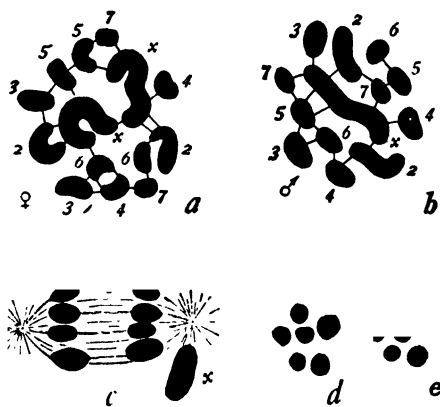


FIG. 1

a. The chromosomes of the female of *Protenor* (a bug) before maturation (Autosomes numbered to indicate homologous chromosomes). b. The chromosomes of the male of *Protenor* before maturation. c. Final maturation division in the male of *Protenor*. Only some of the autosomes shown, homologous partners going in opposite directions. The X goes to only one of the resulting cells. d. Chromosomes of the male determining sperm (No X chromosome). e. Chromosomes of the female determining sperm (showing the large X, somewhat shortened). (After Wilson.)

therefore contain only one member of each pair. This process extends also to the sex chromosomes, and when, as in the female, two X chromosomes are present they are subject to the same distribution as the autosomes. As a re-

sult, every mature egg carries only one X chromosome. But in the males, where only one X is available for distribution, only one out of every two cells can receive it (Fig. 1, d & e). From what has been said it will be clear that all the gametes or mature eggs of the female are alike so far as the chromosomes are concerned, whereas the male produces two types of gametes. For that reason the two sexes are said to be homogametic and heterogametic respectively.

The groups of organisms in which sex chromosomes have been identified under the microscope or cytologically are the following: *Platyhelminthes* (flat worms), *Nemathelminthes* (round worms), *Echinodermata* (sea urchins), a very few *Mollusca* (snails), *Arthropoda* (insects, spiders and *Crustacea*), *Vertebrata* (fishes, frogs, reptiles, birds and mammals) and some plants. But though sex chromosomes can not always be recognized as such by direct examination, it should be pointed out that

their presence may sometimes be established through the phenomenon of sex-linked inheritance (see under GENETICS).

The cytological identification of sex chromosomes is not always easy. It rests in part on a special behavior which is most marked in the maturing germ cells of the heterogametic sex (usually the male). This behavior is especially striking during the stages when such cells are preparing for division, that is in the prophase. At this time the chromosomes are condensing out of an apparently diffuse and flocculent mass of nuclear material to assume the more compact and rounded appearance that they present at the actual division. But the sex chromosomes in some cases never become as diffuse as the autosomes, while in others they pass through the steps of condensation more rapidly (heteropycnosis). They therefore stand out from the autosomes during these preparatory phases, especially when the cell has been stained with certain dyes. Again, during the actual divisions in the heterogametic sex, the sex chromosomes may be distributed to the daughter cells at a different rate (Fig. 1, c). Thus there are species in which they always precede the autosomes, and other species in which they lag behind them. But these criteria should be relied on only with caution, for in some instances other elements in the cell may simulate sex chromosomes in these respects. It can therefore not be sufficiently emphasized that no final conclusion regarding the identity of a sex chromosome is warranted until the chromosomes of both sexes have been studied. If a certain chromosome always has two representatives in the cells of one sex and only one in the other sex, there is justification for the presumption that one is dealing with a sex chromosome.

The technical difficulties attending such cytological studies may often be of a simple sort and yet very difficult to overcome. Thus the 48 chromosomes of the human being usually present optical

difficulties because though they may not actually touch, they nevertheless overlap and obscure each other (Fig. 2, a). Again, though the Y chromosome of the human male may be recognized because it is the smallest of all the chromosomes present, the X appears to be of a medium size and not easily distinguished from several of the autosomes. It is only at certain division stages that the two sex chromosomes are connected by a delicate strand, as in many other mammals (Fig. 2, c, d & e) and the X can thus be identified through the Y. It is because of such difficulties which are especially great in mammals that some doubts have been voiced as to the sex chromosome conditions in man. But though a few workers have maintained that the human male is characterized by an X without a partner, the consensus of opinion now is in support of the fact that a small Y is also present. Certain it is that in human beings it is the male that is heterogametic, there being sufficient evidence from sex linkage alone to establish this fact conclusively.

Short reference may be made to the finding that in a few species the sex chromosome is compound. This simply means that the X or the Y has been broken into several parts. Since these parts or components, though separate, nevertheless act as a unit in all the activities of the cell, all that has been said previously also applies to them. Thus if in the heterogametic sex there is an X of two components, the homogametic sex will show two X chromosomes, each of two components.

Although the correlation between the incidence of sex chromosomes and sex has been known for some time, the more detailed analysis of the relationship is of a more recent date. These later findings do not controvert the older idea that the process of sex determination rests on a quantitative basis of such sort that two X chromosomes produce one sex, and one X chromosome the other, but they do serve to show that we are not dealing with any special and

perhaps mysterious substance in these chromosomes (call it sex chromatin, X substance, etc.). The conception of such a substance was quite in conformity to the general tendency to put sex phenomena in a special category, and it is perhaps almost a disappointment to some that recent evidence makes it clear that we are dealing with the same mechanism that determines the heredity and development of every other character of the body as well.

In brief, this mechanism as it pertains to sex determination is as follows: The appearance of any character or organ is the final result of a combined action of many hereditary units or genes. Speaking of sex determination as a general phenomenon, it appears that in every organism there are genes which tend to push development in the female direction as well as other genes which tend to push toward the male side. These genes are distributed more or less at random over all the chromosomes, but it so happens that in the X chromosomes of most organisms the genes for femaleness preponderate over the genes for maleness.

On the other hand, in the autosomes taken as a whole, the reverse is true and the male determining genes preponderate over the female determining genes. In a sense therefore, sex determination rests on the balance between these two sets of genes. In the majority of cases the conditions are such that if two X chromosomes are present, the female determining genes are sufficient to outweigh the effects of the male genes and hence such an individual develops into a female. But the female effect of a single X cannot overcome the effect of preponderance of male genes in the autosomes, and therefore male development results. The presence of a Y normally does not influence this relation, since it usually carries few or no genes of any sort.

It will be recognized therefore that the number of X chromosomes present determines the course of sex determination, just as was formerly believed,

though it is of course true that the autosomes play a very important rôle in the process.

The comprehension of these facts at once throws light on a group of cases that formerly were rather puzzling. In these it is the male that is homogametic (XX) and the female heterogametic (XO or XY). To differentiate between these forms and the more common types, their sex chromosomes were designated as ZW instead of XY. Such a condition is encountered in all birds, certain fishes, butterflies, moths and one other group of insects, and perhaps in a few reptiles. The explanation probably lies in the way in which the genes concerned with sex are distributed on the chromosomes of these forms, it being such that the X is preponderately male determining and the autosomes female determining. In other words, the effective distribution of the sex genes reverses that which obtains in the majority of forms.

Though the findings as here stated serve to show that in sex determination we are dealing with the regular mechanism of heredity, it is only fair to state that much remains to be done. Thus it is important to know the number of genes involved, their exact location on the various chromosomes, and the rôle that each plays in the process as a whole. Such investigations are already in progress. Whether these analyses will clear up the purely cytological peculiarities of sex chromosomes can not be predicted. The elucidation of the latter bids fair to throw much light on the behavior of autosomes as well.

It need hardly be pointed out that the mechanism of sex determination as here presented is in no way to be regarded as inimical to the hypothesis that in some animals the final expression of sex is brought about through the instrumentality of the secretions from other organs. The idea of a genetic basis for sex determination is not affected by physiological interpretations of the way in which the genes

accomplish their effect. Again, there seems to be no reason to suppose that the effects of genes involved in sex determination differ from the effects produced by other genes in being immune to environment agencies, be they external or internal. It is therefore no argument against the genetic theory to point out that an organism with the chromosomes of one sex may, through abnormal developmental conditions, be induced to show certain characters of the opposite sex. The nature of such a change is basically equivalent to that occurring in certain plants which under the influence of abnormally high temperatures produce white flowers, although the genes concerned produce only red flowers under the usual temperatures.

The great general interest which has attended the discovery and investigation of the sex chromosomes can be appreciated only when one realizes the immense confusion that characterized the question of sex determination in former years. It is true that sex chromosomes were seen and described by Henking as early as 1891, but it was not until 1901 that their relation to sex determination was suggested by McClung. In 1905 were started the researches of Wilson and Miss Stevens, it being the work of the first mentioned investigator especially that did so much to establish the full significance and universality of the principles involved. The success of the genetic analysis, although the result of many independent lines of attack, is indissolubly connected with the names of Goldschmidt and Bridges.

F. S.

CIRCUMCISION is the oldest as well as the most widely practised surgical operation, and it is the only one that bears a mystical or religious significance. The operation consists in the removal of the foreskin—a double layer of skin and mucous membrane which covers the glans penis more or less completely. In every male animal through-

out Nature, the glans is thus covered, undoubtedly as a protective measure in Nature's economy.

Yet, since prehistoric times, circumcision has been practised as a ritual by peoples unrelated and widely scattered over the face of the globe. Where the practice originated and why is still clouded in mystery. We know that the Egyptians practised it at least 17 centuries B.C., and the Arabs at least 4 centuries B.C., while the Jews have practised circumcision as a symbol of the Biblical covenant between God and Abraham for nearly 4000 years. Cortez found it practised in Mexico and the practice was common among the Aztecs, the Mayas, some of the American Indian tribes, the aborigines of Australia and in South America along the Orinoco.

To-day circumcision is practised ritually not only by the Jews and Mohammedans, but in many parts of the world; and it is a curious fact that certain primitive tribes which practise circumcision live alongside other tribes which do not adhere to this ritual. In Madagascar and other places, the boy's godfather eats the foreskin dipped in egg-yolk.

It is interesting to note that a similar operation, removing the foreskin which covers the clitoris in the female, is also very widely practised in Arabia, Egypt, Nubia and other parts of Asia and Africa. Quite recently (1929) Dr. Belle C. Eskridge, of Houston, Texas, having studied school girls for 27 years, recommended the circumcision of girls, which she performs for relieving nervousness and masturbation due to retained smegma or adherent prepuce.

As regards male circumcision, it must be obvious that this practice, which has such an ancient history and almost universal distribution and has survived these thousands of years with increasing popularity, must have something more than a merely ritualistic or racial basis to account for its survival and popularity in civilized life. This can be readily explained by considering the subject from a medical and hygienic standpoint. Circumcision has its ardent advocates as a hygienic measure but it also has strong opponents among medical men. Let us first consider the reasons given by those who oppose routine circumcision:

- 1, that Nature has endowed all male animals with a foreskin as a protective covering for the sensitive glans, and it is therefore a contravention of Nature to remove this protective covering; 2,

that circumcision is a relic of barbarism, and as such should not be practised by civilized peoples; 3, that removal of the foreskin deadens the nervous sensitiveness of the glans in the act of coitus, and thus diminishes sexual pleasure and predisposes to eventual impotence; 4, that the hygienic benefits ascribed to circumcision can be attained equally as well by various palliative measures, such as stretching, passing a probe around the preputial cavity, and a high degree of cleanliness.

These objections to circumcision are readily answered by its proponents as follows: 1, It is true that the foreskin offers protection to the sensitive glans in lower animals and undoubtedly served the same function for primitive man; but now that men wear clothes and do not live in jungles, the foreskin is entirely unnecessary as a protective organ; 2, while we are not concerned with the barbarous origin of circumcision, we are concerned with the fact that it offers many hygienic and prophylactic benefits of which we, as civilized men, should take advantage; 3, the charge that circumcision diminishes sexual sensitiveness and induces impotence is completely negated by the fact that the races and peoples who have practised ritual circumcision for thousands of years are concededly among the most prolific and sexually virile peoples in the world and their sexual potency has never been questioned; 4, stretching the foreskin and passing the probe within its cavity may afford momentary relief in some cases with adhesions, but these measures never have been shown to be of permanent value; and lastly, the smegma and other accumulations within the preputial cavity absolutely preclude the possibility of a degree of genital cleanliness even comparable with that attained as the result of circumcision.

Having disposed of the objections to circumcision, let us consider the definite advantages which this operation performed in infancy offers. The writer, for many years, has advocated infantile

circumcision purely as a hygienic measure. His reasons have been given in detail in previous publications to which the reader is referred. Briefly stated, these reasons are as follows:

1. In the circumcised there is no secretion of smegma and no accumulation of urine and other secretions, with the resultant absence of the odor which so often clings to the uncircumcised, even to those who are familiar with soap and water. A certain degree of balanitis is practically always present in the uncircumcised and no amount of washing and cleansing seems to be able to eradicate the secretions of the foreskin and their penetrating odor.

2. Phimosis and paraphimosis cannot occur in the circumcised. That is obvious. Consequently the pathologic conditions which follow in the wake of phimosis and paraphimosis cannot and do not occur in the circumcised. It may be mentioned as an interesting historical fact that the phimosis of Louis XVI, of France, and his consequent impotence which was finally relieved, seven years after his marriage, by circumcision, are held to be largely responsible for the excesses of his spouse Marie Antoinette, which undoubtedly helped to bring about the Revolution and the execution of the King and Queen.

The presence of a foreskin offers a fertile field for the implantation and growth of venereal and non-venereal ulcers of every kind, for the development of calculi, venereal warts, etc. Some years ago, a boy of 17 was brought to the writer because of persistent, uncontrollable masturbation. He was said to be a "nervous case" and physicians who had been consulted, were agreed that he ought to be sent to some institution. No one had taken the trouble to examine the boy's penis. The writer's examination revealed a tight unretractible foreskin with hard masses like marbles in the preputial cavity. Circumcision disclosed 17 small stones and a severe balanitis. The boy made a complete recovery and was thus spared the

experience of an institutional commitment.

In some reported cases (Vincent) as many as 200 small stones have been found in the preputial cavity. Lefevre extracted a stone the size of an egg from the preputial cavity of a man aged 56, with congenital phimosis, and Velpeau found a stone in the preputial cavity which weighed 130 gms.

The point is that the foreskin permits the accumulation of pathologic growths and foreign bodies within the cavity, and they may remain undiscovered for long periods hidden in a mass of foul and necrotic material. This is especially true of cancer.

3. Circumcision protects against syphilis and chancre. The reasons are obvious. The foreskin is the favorite site for about 75 per cent of primary chancres and even a greater proportion of chancroids. It was observed as far back as 1854 by Hutchinson that in the Jews' quarter of London the occurrence of syphilis was in the proportion of one Jew to 45 non-Jews. In a study of 1500 venereal cases, made by the writer, it was found that 73 per cent of circumcised men sought treatment for gonorrhea and 27 per cent for syphilis or chancre; whereas of the same number of uncircumcised men, 56 per cent had gonorrhea and 44 per cent syphilis and chancre. Leading American authorities are practically unanimous in the opinion that syphilis and chancre are much more common in the uncircumcised. It is obvious that it must be so because of the greater liability of infection in the unclean and constantly irritated tissues in the uncircumcised.

4. Circumcision is a 100 per cent prophylactic against cancer. Limitations of space forbid more than a brief statement of the facts. It may be accepted as proven beyond the shadow of doubt that penis cancer has never been reported in a man circumcised in infancy, whereas this form of cancer constitutes from 2 to 3 per cent of all cancer in men. The writer, in 1932. re-

ported 2484 cases of penis cancer, all in uncircumcised men. Thirty-three cases (2 per cent) occurred in Mohammedans, who practise ritual circumcision at the age of 10 to 13, but not in infancy, as the Jews do. This uncircumcised period allows for the development of pathologic conditions in the preputial cavity which, later in life, become cancerous.

It has been stated that the freedom from cancer among the Jews is racial in character; but this is negated by the fact that the writer reported one case of penis cancer in a Jew, who had not been circumcised. There can be no doubt that the recognized immunity of Jews against penis cancer is due entirely to the absence of the foreskin from the very earliest days of life. In other words, where there is no foreskin there will be no cancer.

5. Circumcision is a prophylactic against masturbation, convulsions in infants, and other reflex irritative phenomena. The literature abounds with evidence to corroborate this statement. The reader is referred to the writings of Gowers, Baker, Lydston, Moll and Block for details.

6. Circumcision is a prophylactic against local complications in venereal disease. Balanitis, with extensive ulceration and necrosis of the glans and foreskin may supervene in the presence of a long and tight foreskin. Suppurating adenitis (bubo) is far more common in chancre and gonorrhea when a foreskin is present to dam the natural drainage of the pathologic secretions. The dorsal incision, so often necessary to liberate the accumulated debris and expose the original lesion to view, is but a poor substitute for circumcision (see article on Chancre).

7. Circumcision is a 100 per cent prophylactic against the "Fourth Venereal Disease." As this disease can occur only when a foreskin is present, it is evident that circumcision will prevent it. Authorities who have written on this disease, notably Battaile, Levy-Bing, Scherber and Corbus, are agreed

that circumcision prevents this distressing infection.

In conclusion, it must be stated that circumcision in infancy is a most valuable hygienic measure and a great aid to personal cleanliness.

A. L. W.

CLEOPOLD. A humorous name applied to the Belgian king, Leopold, because of his infatuation for the actress Cleo.

Sigmund Freud: *Wit and Its Relation to the Unconscious* (1905, ch. 2).

CLIMACTERIC, THE MALE. The Climacteric is a particular epoch in the ordinary term of life at which time the body is believed to undergo a radical change.

The physiological phases occurring in men which correspond to the Climacteric or change of life in women have been recognized for but comparatively a few years. This period is much less easy to recognize in men for it depends on internal reorganization and there is no such characteristic external feature as the cessation of the menstrual flow in women. While many men are not conscious of any change in themselves, many others endure unhappiness, anxiety and suffering during this period.

From the moment of conception there is a natural orderly growth and development or evolution which continues through puberty. During this process of evolution every organ, tissue and structure in the body undergoes this progressive change. After maturity there is no further developmental change in the male until between the ages of fifty-five and sixty. At about this time involution, or a reversal of evolution, starts throughout the man's body. Consequently a wasting and diminution in size occurs in some of these organs, tissues and structures, while others may become congested and swollen. Because of these changes the body is forced to undergo a period of readjustment. This period is the Climacteric.

The Climacteric starts with the begin-

ning of involution and lasts to the final wasting of the various structures. It extends over a period of from five to ten years or more, and affects the entire body and its contents. This period of involution in the male corresponds to the menopause in the female, but the masculine episode comes at a later age than the feminine and is less dramatic in its demonstrations. There is a similar liability in both sexes to the awakening of latent diseases and disorders and there seems to be an upset metabolism conducive to the establishment of pathological conditions. The changes in the prostate gland and the testicles of man are the counterpart of the uterine and ovarian changes in women, both structurally and functionally.

Masculinity itself is dependent on all of the internal secretions. It is not confined to the prostate and testicles alone. They are but a part of the system to which most, if not all, of the other endocrine glands belong, and in which these other organs in their relation to the reproductive functions figure with as great an importance as the prostate and testicles themselves.

Modern research in the study of the endocrine glands has contributed much to our understanding of sex life and its clinical problems. All of the endocrine glands act in harmony if functioning properly. They control body functions and interact between themselves and in response to the necessities of the genital system. In addition they adapt and regulate the secondary characteristics both physical and mental to suit the needs of the individual. Once, however, the reproductive organs are removed or undergo atrophy, the genital functions of the rest of the endocrine system cease. When involution starts, the whole endocrine system, likewise, becomes involved and is forced to undergo readjustment.

The symptoms of the male Climacteric are both mental and physical. The mental symptoms may run the gamut from slight nervousness and depression to a violent psychosis, and the severity and

duration of the mental symptoms are, as a rule, determined by the personality, the previous history and the mental and physical type of the individual. Psychic impotency is a common symptom of the Climacteric. Search of literature and of case histories fails to show a Climacteric neurosis where the neurosis first became manifest at the Climacteric. The neurosis has appeared in some form in previous years.

During the male Climacteric the prostate gland and seminal vesicles not only fail to escape the involutionary process, but they may become so involved that they are often the man's only source of worry. His sexual ardor may be easily aroused, his desires unlimited, but his ability is weak, ejaculations are premature, intercourse is unsatisfactory and is followed by weakness and depression. Impotence is a frequent complaint. After the Climacteric sex potency generally returns, not perhaps with the virility and urgency of youth, but sufficient to meet the needs of an understanding wife.

At the time of the Climacteric the man may complain of pains in various parts of his body, especially in the legs, back and lower abdomen. He may also have a urinary insurrection: retention, incontinence, dribbling, dysuria, nocturia, frequency, and at times, hematuria. Any organ or function which has become diseased or impaired in earlier life, unless successfully treated, may at this time show distressing symptoms. An acute illness occurring within the limits of this critical period is attended with more than average risk as the protective powers of the body are less able to resist germ or toxic invasion.

Preventive treatment and reasonable care during the earlier years insures a fairly average normality during the Male Climacteric. It is by no means derogatory or humiliating that men should have a change of life, for after all the difference between man and woman is slight.

C. T. S.

CLOTHES, SEXUAL ASPECTS OF.

There is pretty general agreement that the functions of clothing fall under three main headings: display, modesty, protection. Of these the last does not concern us here: or at most concerns us very indirectly. It is clear however that the first two have an intimate relationship to sex. In elucidating this relationship however we immediately encounter the difficulty of delimiting the field of sex. Sex, as ordinarily understood, includes much more than "the distinction between male and female" as some dictionaries, relying on etymology, define the term. It is usually taken to include all the characteristic feelings and behavior that accompany, lead up to, or follow, the process of reproduction by means of male and female: but there is unfortunately still considerable dispute as to what can legitimately or profitably be regarded as falling under this wide heading.

Sexual conduct, emotions and desires are often found mixed with feelings or actions connected with other biological tendencies, and in the present uncertainty as to the ultimate relationship of the various fundamental instincts and reflexes of the human or other animal species, it is sometimes well-nigh impossible to isolate the sexual elements. In the present case it is evident that the function of clothes in the service of display or modesty contains sexual elements along with elements that spring from other tendencies, notably those that relate to: (a) the individual ego, and (b), man's nature as a social or gregarious animal. The exact interpretation of the relation between sex and dress must inevitably depend upon our view as to the relative importance of these sexual elements as distinguished from those that relate to self or to society.

Clothes are an extension and a covering of the human body. As such they affect primarily two sets of human sense organs, those of vision and those located in, or immediately under, the skin. There can be no dispute that the sense

of vision is often put into the service of sex, however we interpret this latter. In man, largely perhaps because of his assumption of the upright posture, the eye is of predominant importance as a distance receptor, and the first stimulus to sexual thoughts or sexual conduct (in so far as these are dependent on purely environmental stimuli) usually comes through the visual perception of a "sexual object."

In the vast majority of cases this object is a clothed human being, and the nature of the clothing worn obviously has a profound influence upon the occurrence and degree of sexual stimulation. In certain extreme instances (belonging to the category of so-called fetishism) the sexual desires have become so conditioned that an article of clothing—e.g. a shoe, glove or corset—has become almost the sole and sufficient stimulus to sexual activity, while many individuals are so constituted that certain particular types of garment possess for them a special fascination, so that potential sexual objects wearing them are more likely to arouse desire than others, in themselves equally attractive, but differently apparelled.

It is much more difficult to assess the importance of any sexual elements in the tactual impressions made by clothes—impressions which are of course received for the most part only by the wearer. At first sight it might appear that these impressions have nothing to do with sex: but if, with the psychoanalysts, we hold that the sexual libido as a whole can be analysed into a number of "component instincts," each of which can to some extent function "auto-erotically" in at least relative independence of purely genital stimulation, then we are justified in maintaining that "skin-erotism" and perhaps to some extent also, "muscle-erotism" can be and are affected by the clothes we wear.

The matter is complicated by the fact that the influence in question is largely a negative one. As recent questionnaires have shown, many individuals

are capable of deriving an intense satisfaction from the play of sun and air upon the skin and all but the lightest clothing interferes with this enjoyment, as it does also with the pleasurable "feel" of the play of unfatigued muscles during exercise. Indeed the modern cult of nudism and the general tendency of recent years towards lighter clothing depend to some extent upon an increasing recognition of the pleasure to be derived from these sources.

The more positive sensory pleasures to be obtained from clothes are to be found in the "feel" of certain fabrics, in the support of a tight fitting garment, in the snug protection it affords us against cold, and in the sense of extension, of increased bodily size, grace or power, that is given by certain stiff or voluminous articles of apparel (e.g. a top hat, a skirt, a train): though the pleasure in this last case is by no means merely sensory in nature. In all these too, careful introspection may sometimes detect an element of diffuse sexuality—thus corroborating the findings of the psychoanalysts.

The most astonishing discoveries of psychoanalysis in the field of clothes relate however to symbolism. Symbolism in the psychoanalytic sense implies a process of displacement of affect from the thing symbolised to the symbol. In the cases here in question a displacement seems to have taken place from certain portions of the body to the clothes that are worn upon the body; and the portions of the body concerned are—here as in the case of so many other symbols—predominantly the external genital organs. Here, as elsewhere too, the meaning of the symbol is usually unconscious. Among symbols of the male organ there have been found the tie, hat, collar, coat and trousers; girdle, veil, garter may function as the corresponding female symbols; while the shoe has been found to have sometimes a masculine and sometimes a feminine significance.

Voluminous or protective clothing may sometimes also serve as a symbol

of the mother's womb; while—acting in some respects as a “reaction formation” or counterweight to the sexual symbols—certain articles or qualities of clothing may also serve as “moral” symbols, signifying devotion to work or duty. This applies particularly to clothing that is stiff, dark, thick, or tight, as opposed to garments that are soft, gay-colored, thin or loose (just as, in other spheres we imply a moral distinction between the “soft,” the “loose,” the “slack” on the one hand, and the “firm,” the “upright,” the “solid,” the “inflexible” on the other).

This contrast between the sexual and the moral symbolism of clothes may serve to introduce us to what is perhaps the most important fact in the whole psychology of dress, i.e. the existence of a fundamental antagonism between the two primary motives of display and modesty. In virtue of the former we endeavor to increase our beauty or impressiveness, while in virtue of the latter we seek to reduce our attractiveness, to make ourselves inconspicuous or to emphasize our humility.

At bottom these two opposed tendencies in dress correspond to two basic traits of human character, the self-assertive and the submissive. It is generally agreed that the first of these two traits has a sexual aspect, which, following the usage of psychoanalysis and psychopathology, we may call “exhibitionism.” It is a trait that is well developed in the courtship behavior of many animals, who indeed, as Darwin so clearly indicated, may possess organs of display, whose function seems to correspond to the sexual attraction exercised by clothes in the case of human beings. Modesty, in turn, seems to be an aspect of the general tendency to self-abasement, and tends to inhibit sexual display.

In the case both of display and of modesty however the situation is complicated by the fact that we are dealing with two elements—the clothes themselves and the body that carries them. Exhibitionism in its most primitive form

—as manifested for instance by the young child—aims at displaying the naked body. It is only as the result of a fairly complicated process of development that this motive of display becomes to a greater or less extent displaced on to clothes. This process takes place: partly as a result of realizing that clothes can impart to the total appearance a certain impressiveness, grace, or sense of power, that the naked body lacks (this is the true primitive motive of sartorial display, which sometimes seems to be shown in its rudimentary form even by the anthropoid apes): partly as a result of education in modesty, in virtue of which the child learns that it is improper to display the naked body.

In this total process, modesty tends to reinforce sartorial display; since, by making the naked body taboo, it compels the exhibitionistic motive to concentrate upon clothing as a substitute—a substitute that is eventually found to provide some very ample compensations in view of the manifold variety of material, form and color that is possible with dress. But the old longing to display the naked body is never completely conquered: indeed nakedness acquires a greatly enhanced erotic value in virtue of the principle of *omne ignotum pro magnifico* (a principle which may be described in more psychological terms as the increase of stimulation through inhibition). Deliberate use is made of this fact in the transparencies and partial exposures which are so frequent in women's dress and which undoubtedly have for the most part a higher erotic value than mere nudity.

Modesty in its turn has to fight the opposing motive of display along the same two fronts. In its more primitive form it is directed against nakedness: but when clothing has become elaborated and large portions of the body are covered, it directs itself also against that displaced exhibitionism which finds its expression in costly, complicated, novel, or eccentric, costume. At the present moment of sartorial history, female

dress is relatively simple, having undergone a great decrease both in amount and in complication since the middle of the 19th century: hence present-day charges of immodesty deal chiefly with what is held to be undue bodily exposure. In the past however, during certain periods, preachers and moralists have fulminated almost as much against long pointed shoes, high head-dresses, elaborate trains and costly fabrics, as against bared bosoms, arms or shoulders.

The important part played by clothing in sexual stimulation is increased by the fact that in the overwhelming majority of peoples the two sexes are dressed differently. This distinction, lacking as it often does (especially in civilized communities) any purely utilitarian justification based on habit or occupation, is one that we can scarcely regard as springing from any other source than a desire to accentuate the natural differences between the sexes, and thus receive the maximum of stimulation.

Actually, women's dress in the modern western world is a complication of what is termed by Stratz "tropical" costume, i.e., is developed from the loin cloth or apron suspended from a girdle, tending to fit the body loosely and leave some parts exposed; while the dress of western man corresponds to the same author's category of "arctic" costume, which arose out of an endeavor to enclose the trunk and limbs tightly in a manner adapted to cold climates.

Since the psychological characteristics of the two sexes are not sharply differentiated as are their reproductive organs, but permit of innumerable gradations (we are still in doubt as to what can truly be called characteristically male or female in the psychological sphere), it is not surprising that a number of individuals do not readily adapt themselves to the traditional dress of their own sex, and desire to wear a costume that is—partially or entirely—associated with the opposite sex. Where this desire is gratified in its complete form we have the cases of so-called

transvestitism (Magnus Hirschfeld) or eonism (to adopt Havelock Ellis's more euphonious term) that have received considerable attention in modern sexual literature.

We are however still in ignorance as to the more specific motives of eonism, which does not appear to be very closely correlated with homosexual tendencies (though some degree of such correlation probably exists) nor with any known particular anatomical or physiological characteristics. Most students agree that eonism depends upon some process of identification with the other sex, but there is no generally accepted view as to why the identification should express itself especially in clothes.

Fenichel, writing from the psychoanalytic point of view, believes that there are two chief stages in the development of the male eonist: (1) an unconscious refusal to accept the lack of the penis in women; and (2) an unconscious identification of the self with the imaginary penis-possessing woman. According to this view there would be some factors in common between eonism and fetishism which, in Freud's opinion, depends on an unconscious symbolic equation of the fetiche with the missing penis of the mother. On the anthropological side the whole question of eonism is greatly complicated by the fact that temporary dressing in the garments of the opposite sex may take place for a great variety of superficial reasons, ceremonial, magical and other.

In our present society eonism, even in its partial manifestations, undoubtedly raises some measure of hostility and disgust in the majority of persons, this attitude depending on an unpleasant disorientation of the normal heterosexual attitude and a mobilization of the resistance to homosexuality. As a consequence the eonist (especially of the male sex) is apt to be treated harshly and in some countries is considered guilty of a legal offence. In spite of this however there has been in recent years a certain tendency for the dress of the two sexes to become less differentiated: this approximation being due largely to an annexation by women of certain features of male attire, and being manifested most clearly in that field where modern costume reveals its most progressive qualities, i.e. the field of sport.

One of the most remarkable events in the history of dress took place about the end of the 18th century, when European men abandoned the gayer colors and adopted a relatively stable and uniform costume confined to the drabber

hues, leaving to women the extravagances of rapidly changing fashion together with a much greater individual choice of design, color and material. Until that time the dress of men, though different from that of women, had been no less decorative; while among primitive peoples (as among many animals) the male sex is usually more ornamental than the female. The very few historians of dress who have seriously considered this very striking masculine renunciation are inclined to believe that the causes are to be sought in the political and economic changes due to the French and "industrial" revolutions: while at the same time it would appear that the extreme sobriety of male costume is also connected with the "moral" symbolism to which we have already referred.

The change undoubtedly brought about an increased differentiation of the sexes in certain directions, inasmuch as in modern times society tolerates—and to some extent indeed expects—a much greater preoccupation with personal appearance on the part of women than on the part of men. Women have in fact established a monopoly of beauty: the most that men can achieve is to be dressed tastefully, tidily and unobtrusively. There are indications however that this sex distinction, like the others, is now somewhat on the decline. The increasing entry of women into business has provided them also with a "workmanlike" ideal (though this ideal is still far removed from the austerities of masculine office dress): while men on their side are slowly moving towards a greater freedom and diversity, male costume having been subjected to considerable criticism in quite recent years on both esthetic and hygienic grounds.

There is little doubt that the bewildering changes of fashion from period to period somehow express the "spirit of the age," but, owing to the complexity of the social and economic factors at work, the details of this correspondence are far from easy to make out. So far as sexual elements are concerned, suc-

ceeding fashions would seem to correspond to the varying interplay of the two primary motives of display and modesty, together with a varying incidence of both these motives, as regards (a) body and clothes, (b) different parts of the body. Thus, at the very beginning of the 19th century and again shortly after the Great War, there were periods of exceptional freedom in bodily exposure: feminine costume was greatly diminished in bulk and reduced to relatively very simple designs, as compared with the preceding periods of voluminous artificiality.

At the present moment (1935) there is some tendency to return to greater elaboration, but this tendency is being kept in check by a widespread interest in sport and a new found fascination in sun and water bathing (in other words skin and muscle eroticism is exercising a greater influence than in the past).

To go back to earlier periods, the Renaissance showed its outburst of energy and freedom in an audacious display of form and color, the cod-piece which was worn by men for some fifty years and which was sometimes so padded as to stimulate a perpetual erection, being perhaps the boldest feature of dress in recorded history. In this period, as at the conclusion of the middle ages, women's costume emphasized the abdomen in such a way as to suggest pregnancy—an attitude which contrasts strikingly enough with our present desire to conceal this condition or to make it as unobtrusive as possible. The two periods of tight lacing and wide spreading skirts that occurred in the 18th and 19th centuries respectively enormously emphasized the natural feminine characteristics of the slim waist and broad pelvis, the bustle of the late 19th century emphasized the buttocks: while both these last named fashions aimed at dignity and impressiveness rather than at mobility and efficiency.

Quite different was the attitude of the recent post-war period with its ideals of youth and freedom, ideals which led to an accentuation of the limbs (with bare

arms and short skirts) and a certain intolerance of the characteristics of maturity. With the passing of this period, maturity is, during the last year or two, once more coming into its own, and interest is now centered more upon the trunk and less upon the limbs than was the case a little earlier.

In this way there occurs what might perhaps be described as an ever varying mass-fetichism, in which sexual desires at any given period become predominantly conditioned to a particular part of the body—this conditioning revealing itself in the fashions of the period. The actual relationship between sex and dress is thus seen to be determined by the general ideals and aspirations, as also by the history and circumstances, of each succeeding age.

Charles Darwin, *The Descent of Man and Selection in Relation to Sex* (1871).

Knight Dunlap, *The Development and Function of Clothing* (Journal of General Psychology, 1928, p. 64).

Havelock Ellis, *Studies in the Psychology of Sex* (1897–1928, especially vols. I, vi, vii).

Otto Fenichel, *The Psychology of Transvestitism* (International Journal of Psychoanalysis, 1930, p. 211).

Louis W. Flaccus, *Remarks on the Psychology of Clothes* (Pedagogical Seminary, 1906, p. 61).

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Sigmund Freud, *Fetichism* (International Journal of Psychoanalysis, 1928, p. 161).

Eduard Fuchs, *Illustrierte Sittengeschichte* (1910).

Magnus Hirschfeld, *Die Transvestiten—Eine Untersuchung über den Erotischen Verkleidungstrieb* (1910).

Wilhelm Stekel, *Sexual Aberrations: The Phenomena of Fetichism in Relation to Sex* (1930).

Stratz, *Die Frauenkleidung und ihre natürliche Entwicklung* (1922).

J. C. F.

COMPULSIVE ACTS. Sexual compulsive acts are of considerable interest to psychotherapist, sexual research worker and criminologist. In no other case is the splitting of character so apparent; in no other case is the conflict

between intention and urge so striking. All such cases evince the splitting up of personality, whereby the conscious ego (the cultural ego) is overpowered by the second ego (urge ego) and forced into acts which frequently place the individual not only in conflict with the law but also with his own morality.

This can be studied particularly in cases of exhibitionism. Exhibitionism (desire to expose oneself) is a phenomenon so widely spread that, were it not branded as pathological behavior due to attendant peculiar circumstances, it might be considered a normal trait. No one will consider pathological, a man who divests himself of his clothing in the presence of the beloved object when they are alone together; but the same act committed in the presence of strangers or in the street, is already the act of a sick man. Pathological exhibitionism is very wide-spread. Its victims are chiefly men, in the rarest cases women. These persons very frequently come into conflict with the law and the fact that the heavy punishments meted out to the exhibitionists do not prevent them from repeating the act, speaks in itself for the intense force of such compulsions. Exhibitionism of the phallus in the presence of little girls, in front of schools, in parks, on dark streets, is especially frequent, so that we must consider it a species of psychosexual infantilism. Exhibitionism in the presence of adults is much rarer.

Exhibitionism, in my opinion, is rooted in self-love (narcissism) and in the belief in the magic power of one's own beauty. The neurotic (parapath) believes not only in the omnipotence of his thought but also in that of his body.¹ Exhibitionism is the breaking through of a powerful self-love and a projection of subjective evaluation of the surroundings. This overvaluation of the body might be considered generally as a psychic phenomenon. It is interesting to note that in popular belief the baring

¹ The counterpart of narcissism is the feeling of inferiority in relation to one's body, underestimation of the physical habitus.

of the genitalia is considered efficacious in warding off the evil eye. The well-known "fica" of the Romans representing the sexual union was considered an infallible remedy against the evil eye and in some lands is still used as such.

A very remarkable characteristic of exhibitionism is its suddenness, its urgency, its impulsiveness, its irresistibility. When one has the opportunity of hearing the confessions of these sick individuals—for they are sick—there is always the repetition of the same complaint: the irresistibility of the urge against which the unfortunates wage a losing battle. Deep remorse and utter depression inevitably follow each of these acts. The majority of the patients complain of somnolent condition and stress again and again that they felt themselves in a sort of "twilight state" during the entire act.

For this reason attempts have been made to connect exhibitionism with a temporary mental aberration; in fact, acts of exhibitionism were conceived of as epileptic equivalents. Exhibitionism does not concern itself with genitalia only, for there are cases of exposure of the nates, Jean Jacques Rousseau being a most famous example. All such compulsive acts are committed in a state of intoxication, a day-dream; and it is characteristic that the sick individual really repeats an impression received in his childhood. And with this we have arrived at the decisive point. The afflicted person falls into a dream-like state and during this day-dream repeats a certain scene of his childhood; he becomes a child again.

I have had such a case under my care, a man 39 years old, photographer by trade, who on several occasions had come in conflict with the law. He came to me, complained and wept, begging me, by hypnosis, to free him of his compulsion. During psychoanalytical treatment the following came to light: He was six years old when his mother died. After three years his father remarried. The child who clung to his father (who was very kind to him) with worshipful de-

votion was, from the very beginning, opposed to the stepmother, a moody woman from whose strictness he suffered much. Under these circumstances, he thought it very strange that the stepmother should have had no feeling of shame where he was concerned. She washed herself in his presence exposing her whole body; she walked up and down the room entirely naked which excited him violently and induced premature puberty. Under the stress produced by these excitations he began to masturbate at the age of twelve.

When he was thirteen, his stepmother seduced him; she came to his bed, played with his genitals, saying now that as he was grown-up she wished to give him practical instruction. A sexual act finally completed this scene, the stepmother seating herself upon him. Although he experienced a powerful orgasm, he reproached himself bitterly and could not look his father in the eyes. He resolved to resist every temptation. However, no sooner was she alone with him, than she entered his bed and aroused him so violently that he gave up all resistance. She always chose the above mentioned position, he assuming the passive rôle.

At the age of fourteen he left his father's house. He had contact with various women, but the image of the attractive stepmother was always present at such times. He had predilection for mystical occupations and very early learned the art of sleight of hand. He believed himself possessed of supernatural powers. Since his stepmother came to him willingly (which was fulfillment of his secret wish) he believed implicitly he had compelled her to him by the power of his will. He, nevertheless, avoided his father's house when he knew his stepmother would be alone, thus guarding himself against his desire. He was nineteen years old when his father died. His stepmother remarried when he was twenty, and it was at this time that his heretofore normal urge changed. He began to interest himself in girls between the ages of 12 to 13; older girls

did not attract him. He was able entirely to suppress the stepmother-image and to replace it with girls hardly in their teens. And with this the exhibitionism urge made its appearance.

What do we learn from this case? That the patient was driven by the impulse to suppress the stepmother-image; that the memory of her nudity lived intensely in his soul; that his exhibitionism in the presence of a child was an act of transference whereby he exchanged the rôles: he played the stepmother, and the girl to whom he exposed himself was he. Only by explaining this transference of the impulse was it possible to liberate this man from his infirmity. It is, therefore, a question of memory-image, of wakeful-hallucination to which a "shred of reality" lends a strong actual value.

It is characteristic that the first attack of exhibitionism followed a period of two months' abstinence terminating with an act of masturbation during which he reënacted the scene with the stepmother. In all cases of exhibitionism we find similar regression to infantile lust-sources. Compulsive acts are substitutions for other coercive acts which are subject to strict prohibition of the moral ego. The image-affect repressed in consciousness is transferred to a substitution act. Inasmuch as the substitution act is merely a symbolic representation of the unconscious act, it never leads to complete gratification and the urge is never appeased.

Further, I wish to add that such patients usually masturbate in front of a mirror whereby they repeat a scene from their childhood identifying themselves with another person. Such patients, in their phantasies, succumb to their faculty of changing the external world and they perform symbolic acts whose deeper importance is revealed only in analysis. This tyranny of symbolism would be incomprehensible were the patient's unusual capacity of symbolization and the propensity to hallucinations not known.

An excellent example of this is kleptomania. The fact that kleptomania rep-

resents a sexual substitution act was unknown until comparatively recent times. Kleptomania, contrary to exhibitionism, is chiefly woman's sphere. It is usually a matter of stealing objects which frequently are thrown or given away. Not the stolen object, but the act of stealing per se, is of emotional value to the individual. Women of strict moral rectitude, who would not deceive their husbands under any circumstances, will steal a worthless object in a department store. Valueless as the object may be, however, it is of considerable symbolic value to them. Thus, I had a woman patient who had a mania for stealing pencils, not only in stores but in private homes she visited. She collected these pencils and used them in masturbation while her imagination played with an infantile penis. This case also showed regression into the past.

A common sign of all compulsive acts is that they represent repetitive compulsive acts. Such people run after an infantile impression, infantile pleasure. While they appear to be running forward, in reality they run backward. The impelling motor is situated in the past and its name is infantile pleasure. As a result of a memory, they experienced during the act of stealing a so-called affect-intoxication which is soon followed by apathy and the whole *katzenjammer* of mental depression. All compulsive acts are the result of an affect-explosion.

Viewed superficially, kleptomania seems merely a substitution act. In moral women the forbidden act of adultery is substituted by another forbidden act: theft. Unmarried women, too, break the barriers imposed upon them by society by an act of kleptomania. A deeper analysis, however, shows that the act is a repetition of a childhood experience and the impulse which underlies all compulsive acts really represents a forbidden sexual impulse, a wish to repeat a forbidden act of childhood.

A very interesting phenomenon is the wander-urge, the urge to vagabondism, which springs from an unconscious sex-

ual impulse. It is well-known that the wander-urge gives occasion to a sort of depersonalization and that the wanderer substitutes his ego, his conscious ego, for another ego. I differentiate three forms of the wander-urge. First: centrifugal wander-urge which I named "fugue" or flight *from* home (flight from the parental home, from marriage, from the past). Second: centripetal wander-urge, dromomania, or flight towards home (nostalgia, migration after the parents, desertion, flight into the past). Third: circular wander-urge, poriomania, an urge apparently to leave home but seeking in symbolic form the land of one's youth (actually, therefore, a round-about way back home again).

All such individuals are the victims of a sexual compulsion (rape, sexual murder, child violation, necrophilia) which is subject to strong moralistic prohibition and which manifests itself in a motory impulse to run. Transitory stages of this kind are frequently found in practically all normal people. There are people who, under the influence of a strong inner affect, feel themselves compelled to run around for hours; they seek, so-to-say, the land of their longing, of their desire. Frequently their aimless running terminates in accosting a prostitute; they accompany her as far as her door and then flee, apparently because of their fear of succumbing to a forbidden sexual impulse. Nevertheless, an eruption of the sexual impulse occurs occasionally. Those gruesome sexual crimes reported again and again by newspapers are usually committed in similar twilight states by pathological poriomania.

In this connection should be mentioned sleepwalking (noctambulism). This manifests itself chiefly in childhood, but frequently in adults as well. Here too, it is a question of dream impulse which has a sexual basis. It is comparatively easy to study these manifestations in children. Boys wander at night to mother's and girls to father's bed. Noctambulism is frequent among brothers and sisters, and I have had cases

under observation where lengthy incestuous relations took place, and where the recollection of the events occurring during the night was completely absent in the morning (amnesia). Hate explosion, however, may also occur occasionally and there are cases on record where serious crimes were committed. For instance: a man murders his wife and his four children; next morning, realizing what he had done he gives himself up to the police. Janet has described many cases where hatred led to a flight from home (fugue). Sometimes we are able to ascertain that hate hides a bipolar counterpart—desire.

A man of my acquaintance runs away from home because he cannot bear his sister; he dislikes her every gesture, she annoys him to such an extent he fears he may do her bodily harm. After traveling aimlessly for two weeks he comes to Vienna. Treatment reveals that he desires her and that this desire has turned to hate as soon as she began associating with another man. These cases show clearly that we cannot explain any case of the ambulatory urge (noctambulism) without subjecting it to analytical examination.

I have already mentioned that these compulsive acts occur during a state of intoxication (*affectrausch*) and are to be looked upon as an affect-explosion. From fear of this natural intoxication the victims of compulsion may flee into an artificial intoxication. They become narcotomaniacs. They resort to opium, ether, morphine, codein, cocaine, etc. In all cases of narcotomania it is possible to ascertain that they are partly a kind of repetition-compulsion; partly an effort to submerge a desire.

Thus far I have not stated that one of the strongest reasons for compulsive acts is the homosexual component which lies dormant in every human being and which stands under a powerful social ban. During the flight from homosexuality, an individual may commit either a symbolic act, succumb to the wander-urge or resort to intoxication. This is especially apparent in periodic compul-

sive acts which we call dipsomania (periodic drinking). I was able to prove the existence of suppressed homosexual components in all cases of dipsomania. Pathological jealousy of alcoholics is well-known. The importance of suppressed homosexuality for the psychogenesis of compulsive acts cannot be stressed too strongly. Among the prohibited urge momenta which release the compulsory act, homosexuality plays the most important rôle. It is an interesting fact that homosexuals themselves are subject to sadistic compulsive acts.

As I have proved by numerous analyses, homosexuality is not an inborn abnormality but an acquired parathy induced by environmental conditions. However, in all cases of homosexuality it is possible to point out a strongly pronounced sadistic component directed chiefly against the female sex. The fear of such an inimical attitude towards women (lust-murder) causes the parathy to flee into his homosexual component. This escape into homosexuality is very dangerous for all parathys and is facilitated because normal people manifest a distinct bisexual predisposition.

We may say, therefore, that disposition to homosexuality is present in every human being and that as a result of certain faulty upbringing and the influence of the milieu, it may be shaped into a determining sexual component. The homosexual is a throw-back, born with a strongly accented urge and this quality he shares with all parathys. For this reason he inclines to jealousy and in such a state his sadism may also be directed toward the male partner and lead to an atrocious crime.

Let us now return to the question of dipsomania. In addition to other motives (the wish to forget something) we are in a position to prove the existence of this homosexual component in every case of dipsomania; during an attack it manifests itself in a fit of jealousy of the partner. Let us cite an example: a happily married man, father of four children, successful in his profession, suddenly begins to drink periodically.

He drinks in the company of men; he likes to talk to them of sex and to boast of his extraordinary potency. He urges his drinking companions to tell him their sexual adventures in detail. He comes home drunk and overwhelms his innocent wife with violent reproaches. He knows, he tells her, she did not enter marriage a virgin (which is untrue), that she had an affair with the local judge and that she continues her relationship with this man up to the present day, etc. When this period has passed, he begs her to forgive him, admits the senselessness and injustice of his accusations and promises—taking a sacred oath—never to drink again. Nevertheless, he succumbs again to his passion. Analysis reveals that he is homosexually infatuated with this judge, or as we say in analytical language, he “transfers” to him. Only after fully revealing his condition to the patient and after conquering his homosexual component, was it possible to liberate this man from the impulse to drink and to make of him a normal human being.

We find similar mechanisms in all narcotomanias. Frequently, unhappy love, shattered hopes, professional disappointment, evil conscience are the causes.

I shall mention here a case of a man who drugged himself regularly with codein. During analysis he confessed he had deflorated a girl and then deserted her. Subsequently she committed suicide because he refused to marry her. He had believed himself a superman who could do anything, but later tortured by anxiety dreams, he resorted to codein and adolin to induce a state of daze or deep sleep in order not to remember his dreams. In these dreams the dead girl appeared before him, reminded him of his crime, denounced him, and left him prophesying evil.

In another case, the fact that he surprised his mother with a lover, sent a boy of seventeen on the way to morphinism. He wished at all costs to forget. This case was the more tragic as the patient maintained an incestuous at-

titude towards his mother, and after his traumatic experience had the impulse to throw himself upon her, to call her a whore and overpower her.

In still another case, a high political personage, who because of his position was obliged to participate in a number of political crimes—which he had to commit personally or cause to be carried out by the order of his superior—suffered a break-down. Under the burden of his conscience he began to intoxicate himself with morphine. Analysis revealed the impulse to kill his superior and with this final crime to revenge himself on the man who forced him in the path of crime.

As a result of my experience, therefore, I maintain: In all cases of narcotomania there is the question of a secret. Treatment frequently fails because the patient will not reveal his secret under any circumstances. The withdrawal method, unless combined with psychic treatment, proves worthless. In all cases it is necessary to discover the reason for compulsive acts and to demand that the patient tell the truth unhesitatingly.

In most cases, we will find sexual abnormalities which, because of an early repression, are unknown to the patient himself. These abnormalities reveal themselves clearly in dreams; since, however, the use of narcotics produces deep sleep and prevents the recollection of dreams, successful psychic treatment is possible only if the patient can be induced to desist from narcotic potions. In my method I do not insist upon a complete withdrawal at once, but accomplish the weaning by lessening the dose over several weeks. I decrease the dose approximately by $\frac{1}{20}$ th, and continue to diminish it in this proportion so that the weaning is accomplished in twenty days. Where unusually large doses were taken, the withdrawal is extended over a period of thirty days, while psychic treatment is continued, in a superficial manner, of course, because the truth breaks through in dreams only in the sober period.

I wish to add that narcotics allow the patient to abandon himself to day-dreams which permit him to experience hallucinatory forbidden acts: incestuous urges, repetition of infantile experiences with parents and brothers or sisters, a type of psychosexual infantilism which is produced by annulment of reality, and facilitated by narcotics.

Cocainists exhibit an entirely different behavior. They use cocaine so that after a dose, when under maniacal excitement, they may commit acts of which they would be incapable when in possession of their faculties. Thus, I knew a woman who could gratify her prostitute-instinct only in cocaine-intoxication. In this state she would run out into the street and give herself to the first man who accosted her.

Also of great importance is a fact, confirmed by others, that cocaine addicts abandon themselves to homosexuality while under the influence of the drug, and that they completely lose the desire for heterosexual intercourse. Two men under my observation who had committed the first homosexual act under the influence of cocaine, were later unable (even without cocaine intoxication) to resist homosexual gratification.

An unusually tragic case lingers in my memory. A physician, himself a cocaineist, seduced his father to taking the drug. They reached the stage of mutual masturbation. Analysis revealed that here was a question of repetition of infantile trauma.

It is a well-known fact that all narcotomaniacs wish to convert their acquaintances to the passion. Their apparent rôle of seducers can be explained without much difficulty. By inducing their victims to take narcotics, they hope to bring about the break-down of all ethical inhibitions. In marriage, too, the narcotomaniac endeavors to make his wife familiar with his craving; while intoxicated she may agree to commit acts which, with an unclouded mind, would be impossible.

The sexual root of compulsive acts is clearly apparent in cases of pyromania

(incendiarism mania). It is strange that the sexual root of pyromania has escaped the notice of most criminologists, despite the fact that in cases of pathological incendiarism, the hidden connection is very apparent at first sight.

If, for instance, a servant-girl sets fire to a barn where the stable man sleeps because she wants to take revenge for her unrequited love, one need not think of a symbolic act. If, however, she first sprinkles his bed with kerosene and in this way sets fire to the barn, the action signifies clearly: "I want the stable man to be on fire for me; he shall burn for me." In the numerous reports of pathological incendiarism committed by girls, we find that the bed was set on fire first. A housemaid wishing to take revenge on her mistress sets the master's bed on fire; in another case the bed of a female rival is burned wherein homosexual motives play a part.

In all cases of incendiarism, the first suspicion falls upon the children. Many children like to play with fire. With many adults incendiarism is a regression to infantile impulses. Often the motive of the child is to revenge himself on the grown-up, but here too we find a sexual root.

There are two types of children: one takes a lively interest in fire and everything connected with it (among these are many bed-wetters who play fireman in their dreams); with others the desire to play with fire appears suddenly following a traumatic experience and may disappear just as suddenly as it came. The first group of youthful pyromaniacs is very dangerous. Especially dangerous is their playing with gas flames and later in their making explosives. Thus many bomb-throwers may have been pyromaniacs in their youth. It is characteristic of such persons that they frequently dream of fire, and many incendiaries state they were inspired to criminal deeds by a fire-dream.

Incendiarism may frequently be combined with the wander-urge, and I know a case where the incendiary drove his motor-cycle through country-roads un-

til he was exhausted and then went to sleep in a barn. He had a fire-dream, and actually set the barn on fire. At the sight of the flames pyromaniacs either masturbate or pollute themselves.

Nostalgia may become a motive of incendiarism. Elsewhere I have described a case of a pyromaniac who had lived in incestuous relationship with his mother. When war came, he was compelled to leave. He set fire to a library building, causing the destruction of invaluable book collections. Jilted love, the death of a sweetheart, parental refusal of consent to marriage, may lead to pyromaniacal revenge acts. Many epileptics flee from the incendiary impulse into an epileptic fit. Before losing consciousness, they claim they see red flames. Frequently, masturbators are subject to incendiary phantasies. Thus masturbation assumes a protective social function and the incendiary's statement to the physician: "Had I masturbated the night before I set the building on fire, I would not have committed the crime," is easily understood.

I will forego citing extensive case reports which confirm this mental process. My work, *Compulsive Acts*, contains numerous case histories described in detail and literature on the subject. To the most widely spread compulsive acts belongs gambling, which in disappointed individuals and parapsychists often reaches the stage of mania. During the game, a state of affect-intoxication is reached which makes the individual forget everything which lies outside of the game. Gambling assumes a symbolic importance and the proverbial expression "lucky in cards" does not mean being "unlucky in love" (which in itself shows the connection between sexuality and gambling), but the possibility of wish fulfillment.

Sexual motives in gambling are especially apparent in the celebrated writer, Dostoevsky, who was also an epileptic. I have proved that during an epileptic fit he suffered lust-murder hallucinations. In fact, according to his own admission, he experienced an in-

tensified sexual desire (pollution?) during the attack; after his recovery he stated he would give years of his life again to experience so intensive a desire. Upon opening his archives, after his death, a plan for a novel was found (*Confessions of a Sinner*); this sketch and the unpublished chapter of his *Demons* contain a realistic description of a lust-murder of a little girl. There are among gamblers many individuals who were disappointed in love, and all such cases manifest a phenomenon of a transference affect.

Finally, I wish to mention a disease known to neurologists as "tic," which as a psychogenetic ailment, caused by a psychic conflict, lends itself to psychological treatment. The tic represents an arrested impulse, and may become the expression of suppressed desire, auto-erotic stirrings and acts of revenge. In this connection, I wish to mention the case of a curious tic which manifested itself in intensive trembling of the right hand. To understand the following it is necessary to explain that every kind of tic degenerates in the course of time and changes its original, obvious, action into an enigmatic rudiment. This man wanted to stab his brother-in-law to death. The impulse represented the first motion of the right arm which in the course of years transformed itself from a definite action into an apparently harmless trembling. I wish to add that all sexual pathological urges may manifest themselves as compulsive acts.

The various lust-murderers, necrophiles and cannibals declare they are suddenly seized with an irrepressible agitation. These cases are exceptions. Most frequently such compulsive acts manifest themselves in an inner restlessness and intense feeling of anxiety (fear of own urge), an irresistible need of external motory experience; most frequently in running to exhaustion but also in maniacal drinking or intake of drugs. It is characteristic of dipsomania that drinking gives the dipsomaniac no pleasure. On the contrary, many say they abhor alcohol and they

drink without feeling its taste. Genuine compulsive acts are accompanied by fear and partly by distaste. A state of *katzenjammer* usually follows. The splitting of personality is a pronounced aspect of all such cases and may even lead to a state of depersonalization.

Pathological compulsive acts resemble various acts of the normal individual. Frequently the borderline is distinguished only with difficulty. Predisposition (*anlage*) may be present in every individual. Thus, masses are easily swayed by their leader to commit impulsive acts. The leader's suggestion falls upon fertile ground. Only full knowledge of one's weakness and urge-direction protects the individual from being overwhelmed by his other ego. The truth of the proverb of the ancient Greeks, "Know thyself," has once more been confirmed by the results of psychoanalysis.

W. S.

COMSTOCK, ANTHONY (March 7, 1844—September 21, 1915), American censor, was born in New Canaan, Connecticut. His parents, strict Congregationalists, were Thomas Anthony Comstock, a farmer and sawmill owner, whose economic status did not entirely justify his having fourteen children, and Polly (Lockwood) Comstock, who died, not old, but worn-out, in 1854. More than half a century later, her pious son, always an enemy of birth control, declared that the "whole purpose" of his life had been to honor her memory. The Freudian significance of Comstock's attachment for his mother—who was his "ideal woman"—and his identifying his wife with her, receives attention in the life by Heywood Broun and Margaret Leech.

His slight formal education (he never learned to spell correctly), obtained at a local school, Wyckoff's Academy, and at the New Britain High School, ended in 1861; in the following year, he became a clerk in a general store at Winipauk, Connecticut. In December, 1863, he enlisted in the Union army (17th Connecticut Volunteers, under General

Gilmore), taking the place of a brother, Samuel, who fell at Gettysburg. During his service of eighteen months in Florida, he kept a diary (as he did also in his later years), which is of interest chiefly because of its first indications that he was, like John Bunyan, actively troubled with what Mark Van Doren calls a "curious, vague sense of sin." From the diary, we learn that Comstock did not drink, smoke, or swear, and that he was not popular with his fellows.

Honorably discharged in July, 1865, he returned to New Canaan and held a few clerking positions in small stores; in 1867, with a capital of \$3.50, he came to New York, where he was porter, shipping clerk, and salesman for several drygoods houses — rather inadequate preparation, it would seem, for one destined to become a moral crusader and to pass judgment on the moral effects of literary and artistic works. In 1868, he began the type of activity with which his name is inseparably associated: as a result of a Y. M. C. A. Campaign, he was instrumental in securing the arrest of Charles Conroy, publisher of "obscene" literature. On January 25, 1871, he married Margaret Hamilton, ten years his senior, "whom he likened to his mother." Of this marriage was born (December 4, 1871), a daughter, Lillie, who died on June 28, 1872.

Soon after his marriage, he offered his services to the Y. M. C. A. as a crusader, and aided in the formation of the Committee (later, the Society) for the Suppression of Vice (of which he was made Secretary, and Special Agent, in 1873). In March, 1872, he made his first arrest, and from that year until his death he drew upon himself a greater measure of ridicule and abuse than has fallen to the lot of any other American.

In 1873, he went to Washington, where he was successful in having passed postal legislation preventing the sending of "obscene" matter through the mails; at this time, he also received an appointment from President Grant (which did not carry any salary until 1906), as Special Agent of the Post Office Depart-

ment; this post, and his Secretaryship, he retained until his death. It was in this year, also, that he definitely gave up his business for the career of a reformer and moral crusader, influenced, perhaps, by his success at Washington and by the appointment he had received. In 1874, Conroy, annoyed at being arrested again, slashed Comstock in the face with a knife, inflicting a wound that he carried to the grave. (Comstock arrested Conroy for the last time in 1906.)

In 1876, he founded a purity organization, the Watch and Ward Society, in Boston. In 1887, he raided Herman Knoedler's Art Gallery, in New York, suppressing no less than 117 paintings that he regarded as "indecent and immoral." That Knoedler, in business for over forty years, enjoyed a high reputation for professional honesty and artistic decency, and that many of the paintings seized were reproductions of Paris Salon Prize Winners, meant nothing at all to Comstock, who, it appears, was not clear as to the exact difference between "Salon" and "saloon."

In 1905, he took action against George Bernard Shaw's *Mrs. Warren's Profession* (1894), although he admitted that he never saw or read the play. Shaw promptly indicated his contempt by coining the word "comstockery"; Comstock, not to be outdone, returned the compliment by referring to the dramatist as "this Irish smut dealer." In 1906 (on August 2), in the face of tremendous criticism (of which he was not afraid), he raided the Art Students' League, on the ground that their publication, the *American Art Student*, containing sketches of male nudes, was "unfit for distribution." Gutzon Borglum, noted sculptor, led the opposition, and the case was finally dropped at the instance of District Attorney Jerome, but only after 1000 copies had been destroyed. In 1911, his passion for purity forced the removal of unclothed wax figures from the windows of a Broadway clothing store.

The year 1913 was a busy one for Comstock: he instituted proceedings

against *Erotic Symbolism* (1906) by Havelock Ellis (securing the penalty of a fine), *Hagar Revelly* (1913) by Daniel Carson Goodman (in which he did not secure a conviction), Christabel Pankhurst's *Plain Facts About a Great Evil* (which he withdrew after a conference with Mrs. O. H. P. Belmont), and Paul Chabas' *September Morn* (which had received the 1912 Medal of Honor in the Paris Spring Salon, and which the court declared was not immoral).

In 1914, Comstock protested against photographs of athletes exercising in trunks; against a photograph of an ancient statue of a naked faun (the medium in which the offending picture appeared was *The Chautauquan*, official organ of the Chautauqua Institute, a highly respectable educational society, and the photograph itself came from the University of Pennsylvania); and against the performance of *The Beautiful Adventure*, a harmless French comedy by de Flers and de Caillavet. For this last complaint he was rebuked by District Attorney Whitman. In 1915, he was sent by President Wilson to California as the American delegate to the International Purity League.

Comstock, eleven days before his death, was fighting to retain his Post Office Inspectorship, and against William Sanger, who was charged with giving away copies of *Family Limitation*, a pamphlet, by his (then) wife, Margaret Sanger (1883-). William Sanger, convicted, preferred thirty days in prison to a fine of \$150, but Comstock, never a dignified man, became ill after the trial, partly as a result of shouting and screaming at his victim. On September 10th, he was in court, strong, furious, and active, but it was his last day of power. On the 11th, he was ill with fever, and did not recover. He was buried at Evergreen Cemetery, in Brooklyn. That he was absolutely honest in money matters is indicated by his will: after a career of forty-three years, he left only a very modest home, in

Summit (N. J.), and \$6,000, in insurance.

Among the many famous cases in which he figured may be mentioned those involving Madam Restell (1811-78), New York abortionist and contraceptionist, De Robigne M. Bennett (1818-82), freethinker, and founder of *The Truthseeker*, George Francis Train (1829-1904), author of *Championship of Women* (1868), Victoria Claflin Woodhull (1838-1927), spiritualist and free-love advocate, her sister, Tennessee Claflin (1845-1923), Equal Rights Party candidate, in 1872, for President of the United States, and Ida Craddock (1857-1902), a Philadelphia Quakeress who went erotic and wrote a series of papers to support her claim that she was married to an angel. His greatest victories involved Madam Restell (whose real name was Ann Lohman), and Miss Craddock. Madam Restell cut her throat on April Fool's Day, 1878, in the elaborately furnished bathroom of her "palace" at 52nd Street and 5th Avenue; Ida Craddock took gas in her room on the fourth floor of a West 23rd Street lodging-house. Comstock openly boasted that he was directly responsible for Madam Restell's death; her suicide, he claimed, was the fifteenth for which he was "willing to take credit." This was in 1878; Comstock was 34; in five years, he had scored fifteen suicides. By 1902, he must have lost count, as Miss Leech tells us that Ida Craddock's "serial number we do not know."

Comstock's household consisted of himself and four women: his wife, a pathetic, colorless creature, so lacking in personality that many testified that they had seen, but could not remember, her; his sister-in-law, Jennie Hamilton, an invalid spinster; his adopted daughter, Adele, a defective, whom he loved deeply; and a maid. Comstock was a good subject for caricature, and cartoonists did not neglect his "thick, powerful trunk, short legs, bald head, whiskered chin, and uncompromising eyes." Many amusing cartoons, revealing him in most unbecoming attitudes, are repro-

duced in Broun and Leech's biography.

As already indicated, Comstock was thoroughly honest, in a financial sense (although he did not hesitate to lie and cheat in order to secure evidence), and he was tireless in performing his duty as he saw it. Early in his career, attempts were made to bribe him (Madam Restell offered him \$40,000), but it soon became known far and wide that he was a "fool" as far as money was concerned. He was never afraid of words or blows; as for the former, it has been suggested that he did not always understand what his critics said about him; as for the latter, only in a few instances did he come off second-best. Conroy knifed him in 1874, and in 1903 a New Haven physician, whose house he invaded, kicked him downstairs, causing serious injuries, but in most cases, Comstock was physically superior to his prisoners. His enemies, we may be sure, were always eager to find a point of attack, but no one ever even suggested that he was guilty of any irregularities, sexual, or otherwise.

For the activities that brought him notoriety, for the career that he selected for his life-work, no one claimed that he had talent, ability, or preparation. "It is clear," says Van Doren, writing objectively, that "he did not know how to distinguish between good art and bad, or indeed between art and morals," and that he was "an enemy of much that is valuable in literature and life." In a calm review, an editorial writer in the *New York Evening Post* arrives at the conclusion that "a man who spends his nights and days in the removal of garbage or the cleaning out of cesspools inevitably acquires the cesspool point of view—the only thing that can save him from this lamentable state of mind is a large perspective and a sense of humor. Anthony Comstock had neither." With every desire and intention to be just, perhaps the best that can be said of him is contained in Van Doren's summary: "He ate heavily, collected stamps, and loved children."

It is interesting to trace Comstock's

development by "tonnage." The method is fair and is suggested by the accounts—prepared by the subject himself—in *Who's Who in America*. Comstock first appears in this biographical record in volume 2 (1901-02), and thereafter in all volumes up to, and including, volume 8 (1914-15). Although details in one volume are omitted in another, he always carefully records the amount of "obscene" literature that he has destroyed: beginning with a modest 80 tons, he advances, slowly but surely, in the following progression: 84, 90, 100, 131, 140, until he reaches the staggering total of 160 tons. In the last year of his life, it was estimated that he increased this amount by at least another 15 tons. Up to 1914, he had caused the arrest of 3,697 persons, of whom 2,740 were convicted; the total amount of fines (a large percentage of which went to the support of the Society) involved was \$237,134.30, and the total amount of imprisonment, 565 years, 11 months, and 20 days. In 1914-15, several hundred arrests and several thousand dollars in fines were added. In a vigorous lifetime that spanned the presidencies of the United States, from Tyler to Wilson, he destroyed 175 tons of material that did not coincide with his notions.

Anthony Comstock, Fighter (1913), by C. G. Trumbull; *Anthony Comstock, Roundsman of the Lord* (1927), by Heywood Broun and Margaret Leech; *Annual Reports of the Society for the Suppression of Vice* (1874-1916); obituary notices in the following N. Y. newspapers: *Herald*, *Post* (and editorial), *Sun*, *Times*, *Tribune*, all of September 22, 1915; *Dictionary of American Biography* (1930, vol. 4); Comstock's own works: *Frauds Exposed* (1880), *Traps for the Young* (1883), *Gambling Outrages* (1887), *Morals Versus Art* (1888).

H. S. R.

CONDOM. This article is devoted to the modern aspects of this subject. For its history, see **CONDOM, HISTORY OF**.

For centuries male sheaths have been made of linen and of the membranous tissues of animals. It was not, however, until the vulcanization of rubber by Goodyear and Hancock in the 1840's that there was, in succeeding decades,

an enormous increase in the sale and use of these instruments both for prophylactic and contraceptive purposes. Within the last half decade (1930-1935) there has been a second revolution in the industry: the manufacture of condoms from liquid latex instead of from crêpe rubber. The introduction of automatic processes of dipping and rolling of the bead or ring have operated in the same direction. Consequently sales have been stepped up enormously. We are all familiar with the fact that the discovery of the vulcanization of rubber revolutionized transportation (automobile tires). Will it revolutionize also the sexual practices of mankind? It seems so.

A recent survey of the modern condom industry made by Mr. Randolph Cautley for the National Committee on Maternal Health shows that approximately 10,350 gross are manufactured each day in the United States, representing a total of 1,490,400 individual condoms. The estimated annual output is 2,200,000 gross or 317,000,000 individual condoms.

Now inasmuch as Dickinson and Bryant¹ have estimated on the basis of the 1925 statistics of fertile married couples, that 3,000,000 decisions are made daily on the use or non-use of contraceptives in married life, we secure a total of 1,095,000,000 decisions on an annual basis which is to be compared with an annual condom production of roughly 300,000,000. This is only one proof of the enormously important rôle which this instrument plays in the contraceptive and prophylactic life of the American public.

Another line of evidence of its importance comes from the statistical records of the birth control clinics. Himes has recently tabulated the methods of contraception employed by nearly 27,000 patients *prior* to their visit to a birth control clinic. The condom was used roughly in one-quarter of the instances. Douching was of about the same degree

of popularity, with withdrawal leading. All other methods are used much less frequently in that portion of the American population not having had specific medical guidance (that means the majority). So far as extra-marital relations are concerned, the condom is probably the chief contraceptive agent.

By contrast, the female condom remains a contraceptive-museum curiosity. Sales and use must be very small. They are thick and heavy and dull sensation.

The question as to which is the best contraceptive will undoubtedly be a subject of dispute for many years to come. While the condom has its partisans, it is only fair to say that the majority of American birth control clinics, of which there are now more than 150, and most of the European clinics, recommend a vaginal rubber diaphragm in connection with a contraceptive jelly or paste. One English clinic and several Russian ones may be exceptions; but they prove the validity of the rule. Mrs. Sargant-Florence in her *Birth Control on Trial*, (1930) and Enid Charles in her *Practice of Birth Control* (1932) have contended for the superior reliability of the condom. Havelock Ellis took the same view many years ago; but he wrote before the rise of modern clinics. It is hardly necessary for us to adjudicate this question; for no matter what is decided, the character of human inertia is such that the clinics will doubtless continue their present methods. And in this they may be wise. Though it is commonly thought that the pessary or diaphragm is much cheaper for continued use, such is not the fact especially since the price of condoms has fallen so rapidly in recent years. The greater availability of the condom and the relative unavailability (at least until recent years) of the vaginal diaphragm has given the former a great advantage in diffusion.

As is often the case in a modern industry a few producers have cornered the major portion of the market. The three leading manufacturers are respon-

¹Robert Latou Dickinson and Louise Stevens Bryant, *Control of Conception*, p. 1.

sible for 70 per cent. of the daily production; the leading four for 80 per cent.; the leading six for 88 per cent. of the output; all others for 12 per cent.

The business has grown tremendously in recent years following the development of more efficient methods of production. However, the retail drug trade has not participated proportionally in this growth of sales. While a considerable proportion of condoms has always been sold through other than drug store channels, availability in gasoline stations, pool rooms and slot machines has increased. On the Continent they are likewise being distributed by slot machines. This, of course, introduces problems of social control, not to mention problems of quality of product. One or two contemporary American manufacturers have, accordingly, attempted to enlist the good will of the retail drug trade by working for state and local ordinances restricting the sale of condoms through druggists. One manufacturer, with some support from others, has succeeded in getting bills introduced into at least six state legislatures and in securing local ordinances in about 150 communities. These efforts are clearly a bid on the part of manufacturers for the good will of retail distributors, probably with the expectation that once this is gained gross or net profits will increase. Legal control of distribution seems to face many obstacles, and it is not likely that such efforts will be successful, without substantial changes in the economics of quality, retail price and retailer's profit margin.

The revolutionary decline in condom prices with the improvement of processes and the introduction of automatic machinery in the last half decade have led to widespread cut-throat competition and to attempts on the part of the industry to stabilize it by the usual modern economic procedures. The effort eventually failed, the competitive impulses of producers being evidently much stronger than their drive for solidarity. The result is that competi-

tion still reigns—and it is severe, being largely of the price nature without sufficient regard for quality.

Recent technological improvements are of considerable interest. We have spoken of the substitution of liquid latex for crêpe rubber. The former is the whole sap or latex of the rubber tree, suspended in water, concentrated by evaporation, stabilized by ammonia.

Rubber condoms were formerly made of crêpe rubber masticated and dissolved. There were difficulties incident to mastication, solution and fire hazard. Now all American manufacturers save one have ceased to make the "cement" rubber condom from crêpe rubber. The latex product resists aging from three to five years, is odorless and often thinner. The new process requires constant attention of highly skilled chemists and technicians since the use of colloidal suspensions in this industry is new. Even the old processes have been so modified through changes in compounding, and in the use of the "hot" cure instead of the "cold" cure utilizing sulphur chloride gas, that the newer product does not deteriorate so rapidly. Accompanying these changes has been the introduction of continuous, automatic machinery which has also contributed to lower costs and hence to a doubled market (see below for an estimate of prices and the total value of the output of the industry).

In the Killian process, glass tubes (also called "forms" and "bottles") about 14 inches long and $1\frac{1}{4}$ inches in diameter dip into tanks filled with ivory-colored latex at the rate of 1 per second on each side of a dual machine which operates 24 hours per day. Rotating smoothly through the compound, they gather a dripping film of latex and rise out of the tank elevating their angle with the continuous chain to which they are attached, distributing the running liquid evenly about the blunt end of the form and preventing the formation of a drop at the tip. They are dried by hot air, dipped a second time, and dried again. The protective bead or ring at the open end is then rolled by rotating cylindrical brushes, after which vulcanization takes place in a long overhead hot air duct followed by a hot water bath.

The films of latex are partially dried and

dusted with talc, and are then stripped from the forms by brushes quite like the bead-rollers but so placed as to roll the condoms completely off the forms whence they fall to continuous belt-conveyors. The belts take them into an adjacent room and deposit them on a table where women unroll and snap them to remove the wrinkles (induced by the rolling) before they have time to result in permanent sticking. Meanwhile the glass forms have been cleaned by having passed through brushes and hot water, and are beginning to dip again. The entire conveyor, about 500 feet long, and containing about 4,000 glass forms in two series, one on either side of the machine, is driven at a constant rate of speed by two large cogs set about 250 feet apart in a completely air-conditioned room.

The Shunk process differs principally in the method of dipping and in the method of cure. Where the Killian machine rotates the forms through the compound at an angle of 45° with the level of the fluid, the Shunk unit dips the forms vertically into the compound through the elevation and lowering of the compound tanks and the forms remain perfectly stationary except for rotation. The compound runs down the form and forms a hard, thick tip at the very end of the condom. The process is not completely automatic, in that labor is required to transfer the forms back and forth between the dipping machine and the conveyor, which unifies the whole process.

The forms, instead of being fastened to one conveyor, are divided into units of 24, each unit being a separate board or rack. Four of these racks are placed on the dipping arm and taken off after the dipping. Finally, after vulcanization in hot water, the forms and condoms are cooled by a spray of cold water before stripping. The Killian machine is the larger of the two, being adapted to produce 1200 gross per day, while the Shunk unit will produce in the neighborhood of 700 gross per day.

Next step in the compounding, dipping and curing presents opportunities for wide variations in the properties of the resulting condoms. The pH, viscosity and ingredients of the compound are especially important in their influence upon the final product. Continuous agitation of the compound is sometimes necessary to prevent "creaming," a condition in which the rubber particles rise to the top as do the fat particles in milk. Humidity and temperature must be controlled in the dipping, and the temperature of the cure or vulcanization is also quite important. Particles of dust, oil or other foreign matter in the compound at the time of dipping conduce to defective condoms. The cure affects the ageing characteristics and other physical properties. With a viscosity too high, the compound is likely to permit the formation of fine bubbles, which in the finished condom are seen as holes, thin spots

and blisters. Weight, size, thickness, elasticity, tensile strength, ageing quality, resistance to abrasion, reaction with physiological fluids, reaction with lubricants, porosity, presence of foreign matter, etc. are all determined by the technological processing, equipment and supervision.

American condoms are generally much thinner than the European product, for the latter are predominantly of the "cement" type. Those produced in air-conditioned rooms are remarkably free from dirt and foreign matter.

The patents of the industry are chiefly in the hands of three competitive producers; and, while there has been talk of a patent pool, this has not materialized.

Production costs and prices are of importance. Figures on manufacturing costs are extremely difficult to obtain, and they vary, of course, not only with efficiency in production, with control of patents, but with size of overhead (generally speaking, the smaller the output the larger the overhead), with care taken in testing, means of marketing, etc. It is a common economic phenomenon that marketing costs are high in relation to manufacturing costs. This is illustrated very well in the industry under consideration. In a preliminary cost estimate² of \$2.17 per gross, distribution is roughly as follows: \$1.30 is for salesmen, a conservative estimate, 41¢ for overhead (perhaps higher than average), and 20¢ for raw materials. The small balance is for stamping, rolling, packaging, etc. Testing costs vary between nothing and 23¢-25¢, with an average probably around 5¢.

Distributors all over the country can now buy bulk condoms from the leading manufacturers for less than \$.50 a gross, and most of them are sold in bulk by manufacturers to distributors who then resell them, using their own brands and packages. There are countless numbers of brands on the market varying greatly in quality and selling to the retailer mainly from \$.50 to \$1.50 a

² Of tentative value only. It is very difficult to get at cost figures in the industry.

gross, though some run as high as \$5.50 or \$10.80 a gross.

Peddlers, gasoline stations and similar retail outlets constantly undersell the drug stores. They consider condoms a "whisper item," and have consequently insisted upon margins of profit approaching those on drugs. Hence the drug trade has not gained proportionately in sales. It is a common saying in the drug trade that the sale of condoms pays the store rent.

Retail prices vary greatly in this anarchical industry. One brand sells at retail 3 for 75¢. The retail price of a gross is \$36. These can be purchased from the manufacturer for \$6. Is it any wonder that the druggists are being undersold, and that today retail druggists sell only about one-third of the condoms annually produced in the United States? In the face of these economic facts it hardly seems possible that the trade can be restricted to regular retail drug outlets.

It is estimated that the druggists sell in the vicinity of 700,000 gross annually at an average price of around \$16 per gross, or approximately \$11,000,000. Other retail outlets and peddlers sell about 1,400,000 gross annually at an average price of about \$10 per gross, or about \$14,000,000 per year. Thus we have an annual retail value of \$25,000,000. At the price of 3 for 50¢, or \$24 a gross retail, the annual sales to consumers would be valued at roughly \$50,000,000. But since the present average price, under the conditions of cut-throat competition prevailing in the industry, is probably nearer \$12 a gross or \$1 a dozen, the annual value of sales to consumers is probably nearer \$25,000,000 annually. An annual export quota of about 200,000 gross must be allowed for in estimating domestic consumption.

The legal position of the condom and the trademarks thereon were settled in the case of the Young's Rubber Corporation v. C. I. Lee, Co., Inc. in December, 1930.³ It came to light in this case that the manufacturer in question sold 20,000,000 condoms in one year to druggists and physicians. Harmsen reports that one German firm puts 24,000,000 on the market every year.⁴

There are four chief methods of testing; a fifth is used in England. (1) During the "Flip Test" an operator sits at a table with bulk condoms at her left elbow using her right hand to pick

up individual condoms. As they fill with air this is imprisoned in the tip end by a scissor-like action of two fingers of the left hand. The entire condom is thus elongated and the tip distended. This is supposed to show up holes and facilitate rejection of those containing wrinkles or creases. Sometimes the condom is turned over. However, holes, weak spots and dirt specks are not well perceived by this method of testing, which is the least satisfactory of the methods now in use. None the less, this is all the testing most "tested" condoms ever get. (2) An operator fills a dozen condoms with air from a compressed air jet, squeezing them against the body, bursting some and leaving others intact. Visual examination may or may not follow. (3) An operator blows down a condom held vertically with open end up, imprisons some air, and turns the inflated tip to the cheek to detect air streams. (4) A cheek test follows full inflation. At the same time there is a visual examination for dirt, wrinkles, creases, etc. There is a careful, deliberate visual examination of the condom inflated and uninflated, about 15 seconds being spent upon each one. This is the best test in general commercial use in the U. S. A. today. (5) The following test is used by an English manufacturer. Condoms are inflated to about 6 x 8 inches and placed on moving belts about 5 or 6 inches apart. As they are carried slowly across the room—transit occupies 20 to 30 minutes—those which become deflated because of holes or defects drop to the floor between the belts. Several distributors in this country employ visual examination before a frosted glass pane. The laboratory of a certain manufacturer occasionally tests for tensile strength by stretching a portion of the product on a vertical rod; another claims to inflate every third condom with smoke, the outpourings of which are more readily visible.

Testing by the consumer is usually difficult because of his inexperience. Inflation with water and breath are commonly used. The disadvantage of

³ 45 Federal Report, second series, 103.

⁴ R. L. Dickinson and L. S. Bryant, *Control of Conception*, p. 60.

the latter is that exhalation into the condom sometimes causes the powder thereon to form a sticky paste and thus to cover up defects. The percentage of condoms which meet high standards of manufacture vary greatly with different brands. And even some of the good ones are not uniformly good. The habits of consumers militate against effective purchasing of quality products only. These devices are usually purchased rolled, and never examined until the crucial moment. Until the habits of consumers change, it is probably not likely that manufacturers and distributors will consider it commercially advisable to maintain more rigid testing standards.

It is thus seen that the economic, social and medical problems of the production, sale and distribution of condoms are considerable. Certainly we have in the increased sale of these devices and in their use in sex relations one of the most revolutionary changes in modern times. The problems associated therewith merit much more searching, objective inquiry than has up to date been bestowed upon them.

N. E. H.; R. C.

CONDOM, HISTORY OF. Probably the most widely used contraceptive instrument and the most commonly employed agent of protection against venereal infection is the condom. Though its manufacture and use on a large scale are ultra-modern, that is, for less than a century, the condom has a history of several centuries. In fact the use of penile coverings reaches so far back into the dim past that it is virtually impossible to discern with clarity just when they first appeared or just when their first particularized uses developed.

Primitive peoples have used various types of male sheaths for protection against tropical infestations and diseases (e.g., bilharzia and condirus), insect bites, from motives of modesty, as badges of rank and status, as amulets to promote fertility, as a decoration, or for protection against spirits and other evil

influences. The Brazilian Indians were accustomed to protect themselves against condirus by making a cone-shaped device of rolled palm leaves; and C. Jobert describes a small cocoanut used for the same purpose. This possessed a small lock which opened for urination. Koch reports the use by the Apioka Indians of Brazil of a sheath of green, rolled banana leaves. Correspondingly,

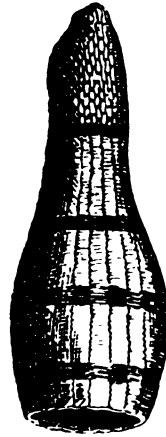


FIG. 1. SHEATH USED BY THE ZULUS OF RHODESIA FOR PROTECTION AGAINST BILHARZIA (One-half natural size)

Archives de Parasitologie, VIII, 153. Also *Verhand. d. Dtschen Gesell. f. Urol.*, 1911. *Tafel V*, Figure 4.

sheaths have been worn in South Africa, Central Brazil, Melanesia, and Polynesia for protection against insect bites. Naville has described various types of sheaths employed by the ancient Egyptians about 6,000 years ago. These were essentially scrotum sheaths, possibly designed to give protection during combat, and were made of firm materials, presumably leather or metal. A gourd-shaped sheath is reported by Blanchard as having been used by the Zulu natives of Rhodesia for protection against bilharzia (Figure 1). Pfister thinks that the motive was similar among the ancient Egyptians, but that modesty may have played a rôle, inasmuch as bilharzia-infected men, when the men went about nude, may have desired to conceal a resulting deformity of

the penis from the women of the community.

Figure 2 shows the Egyptian god Bes wearing what is probably the earliest known forerunner of the modern condom. The model of the god was taken from the Temple of Denderah, built in

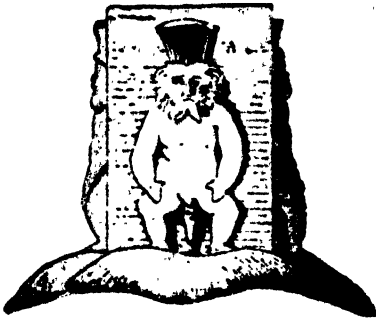


FIG. 2. EGYPTIAN GOD BES WEARING A SHEATH
Archiv für Geschichte der Medizin, May, 1912.

the time of Cleopatra and Ptolemy. Though the picture was first published by Maspero,¹ its true significance was first discovered by Pfister. Bes's rôle in Egyptian life has never been determined; but Erman believed he was god of the toilet.

It is important to note that there is no evidence that any of these penile coverings were used for contraceptive purposes. Their functions were usually quite different. Moreover, they were often made of materials of such a nature as to make intercourse painful or impossible.

It is only fair to say, however, that Dr. Morton C. Kahn reports² that certain women of the Djuka tribe of Bush Negroes of Dutch Guinea, South America, are accustomed to insert into the vagina an okra-like seed pod about five inches long from which one end has been snipped off. This forms a sort of primitive female condom, the intact end lying in the posterior fornix, the open end receiving the penis. The Djukas are highly promiscuous sexually, and

¹ G. Maspero, *Ägyptische Kunstgeschichte*. Leipzig, 1889, p. 52. Übers. v. Steindorff.

² Morton C. Kahn, *Djuka. The Bush Negroes of Dutch Guiana*, 1931. Letter of author.

since intercourse before marriage and adultery are the common practice, it would seem as if the use of this pod, in addition to abstinence from intercourse, abortion, high mortality, etc., would help to explain the average-sized family of two or three children.

There is some evidence, according to the legend of Minos and Pasiphae that a sheath made of skin-like materials was used in imperial Rome. Minos is reported by Antoninus Liberalis³ to have induced a woman with whom he had connection to use a goat bladder intravaginally. Space is not available to discuss here the evidence on the reliability of this report. The important point is that even if animal membranes were used in this early period, there is certainly no evidence of any extensive use for contraceptive or prophylactic purposes.

The first known published description of the condom is to be found in Fallopius's *De morbo gallico* (1564). This is a linen glans sheath, which Fallopius, the great Italian anatomist and one of the early authorities on syphilis, claimed to have invented.⁴ Figure 3 reproduces the appropriate passage which, in translation, reads as follows:

"As often as a man has intercourse, he should (if possible) wash the genitals, or wipe them with a cloth; afterward he should use a small linen cloth made to fit the glans, and draw forward over the glans the prepuce; if he can do so, it is well to moisten it with saliva or with a lotion; however, it does not matter: if you fear lest caries [syphilis] be produced [in the midst of] the canal, take the sheath of this linen cloth and place it in the canal; I tried the experiment on eleven hundred men, and I call immortal God to witness that not one of them was infected."

I fancy not many men painfully inserted in the urethra such a contrivance; and it is doubtful if drawing the prepuce over it would materially aid in keeping such a glans condom in place. One may also doubt Fallopius's oath to "immortal God" that not one of his eleven hundred men was infected.

³ *Metamorphoses*. 41st, "The Fox."

⁴ Gabrielle Fallopio, *De morbo gallico liber absolutismus*. Patavii (i.e., Batavia), Ch. 89 on "De praeservatione a carie gallica" p. 52.

De Morbo Gallico.

...eam, & mediam partem glandis exest: sed quia ego dixi quòd caries oritur per contagium. sciatís quòd etiam oriri solet ratione hepatis transmittentis: dimittamus hanc secundam speciem loquamur de prima quò inuenis coiens cum infecta ab hac preseruetur, & cariem.

De preseruatione à carie Gallica.

C A P. LXXXVIII.

EGO nihil fecisse uideor nisi doceam uos, quomodo quis uidens pulcher rimam sirenæ, & coiens cum ea, etiam infecta, à carie, & lue Gallica preseruetur. Ego semper fui huius sententiæ, quòd adsit ratio precauendi, ne per contagium, huiusmodi ulcera oriantur: sed quæ est ista ratio? Ego dixi quòd nascitur caries hæc per communicata corpuscula saniosa, quæ imbibita poris glandis faciunt cariem, ideò opus est, ut statim saniem à glânde expurgemus, sed si imbibita sit in poris licet uino, lotio, uel aqua detergamus priapum, tamen eam detergere non possumus. & hoc sepe accidit in testis, & mollibus glandibus. Quomodo ergo agendum? semper fui istius sententiæ, quòd ponamus aliquod habens uim penetrandi corium, & dissipandæ materiæ, uel extrahendæ, uel siccandæ & uincendæ natura sit. ideò inuestigauimus hoc medicamentum. Sed quia oportet etiam Meretricum animos disponere, non licet nobiscum unguenta domo asferre. propterea ego inueni linteolum imbutum medicamento, quod potest commodè asportari, cum femoralia iam ita uasta feratis, ut totam apertam uobiscum habere possitis: Quoties ergo quis coiuerit abluat (si potest) pudendum, uel panno detergat: postea habeat linteolum ad mensuram glandis præparatum; demum cum coiuerit ponat supra glandem, & recurat præputium: si potest mandere spuito, uel lotio bonum est, tamen non refert: si timetis, ne caries oriatur in medio canali, habeatis huius lutei inuolucrum, & in canali ponatis, ego feci experimentum in centum, & mille hominibus, & Deum testor immortalem nullum eorum infectum. Notate autem obiter, quòd quælibet species linteoli mundi tantam habet uim in preseruatione, ut nihil magis [ad dicit quòd gosipium nouum, molle, fidibus bene concussum glandi optime locatæ detergentibus, obuolutum mirum in modum preseruat & quum quis Gallicis scopulis lignum percussit post ablationem inspicat: uidebit enim inuolucrum illud saniesum, aut citrino, aut pallido, uel subnigro colore infectum] ideò semper quis paruo linteolo obuoluat glandem per spatium quatuor, aut quinque horarum, & hoc non est molestum mulieribus: sed tamen

1. Præparatur autem hoc modo.

Nota de
preserua-
tione.

Lintheolum
nuncium.

FIG. 3. Page of Fallopius's *De Morbo Gallico* describing a linen glans sheath (1564).

After Fallopius's mention of the condom, it passed down in the enormous European literature on syphilis. This literature has gained in volume and importance with the passage of the years. Even the quip of Mme. de Sévigné, made in 1671, to the effect that the condom was "armor against enjoy-

ment and a spider web against danger" has been handed on and on.

An early eighteenth century English physician, Daniel Turner, in his work on *Syphilis* speaks of

"... the Condom being the best, if not the only Preservative our Libertines have found out at present; and yet by reason of its blunt-

ing the Sensation, I have heard some of them acknowledge, that they had often chose to risk a *Clap*, rather than engage *cum Hastis sic clypeatis* [with spears thus sheathed]."⁵

Turner gives us no description of the instrument, condemns by implication its use, and furnishes no hints on the etymology of the word.⁶

Astruc, writing in 1736, nineteen years after Turner, speaks of great debauchees who, in England, "have been employing for some time sacs made of fine, seamless membrane in the form of a sheath [scabbard] and called in English *condum*."⁷

A plausible theory of the origin of the condom is that a medieval slaughter-house worker first conceived the idea that covering the penis with the thin membranes of some animal would protect one against venereal infection. Perhaps someone tried it, found himself protected, communicated the idea to others.

It seems unlikely that the sheath was used as early for contraception as for prophylaxis. Use for the prevention of conception seems definitely later. The slaughter-house theory of the origin of the sheath seems as reasonable as any, since it fits into the trial and error method of learning—a method used since time immemorial, and one which always will be used. Probably we should discount the claim of Fallopius that he invented the *glans condom*. I think it more likely that the real inventor hit upon the idea by accident; that he is unknown, and that he never will be known.

Many theories have been evolved to account for the origin of the word con-

dom. In the literature of venereology it is most commonly stated that it was invented by and named after one Dr. Condom or Conton, a physician at the court of, or a courtier in the court of, Charles II (1660-1685). There has been a great deal of embroidery of these basic facts in the literature of syphilology; but most of these statements remain to this day unsubstantiated claims. For instance, the story is rife that Charles II was beginning to be annoyed at the number of his illegitimate children; that Dr. Condom invented the instrument for Charles, in return for which he was with much gratitude knighted; also that Dr. Condom had to change his name because of opprobrium eventually associated with it.

Ferdy and Havelock Ellis unsuccessfully attempted to trace such a person; and I am informed by one of the greatest living authorities on Pepys that the latter's diary, so far as it has been deciphered and published, makes no mention of such a person, as it would be quite likely to do had he really existed.

The word Condom first appeared in Turner's treatise on *Syphilis*.⁸ One finds in Bachaumont's diary-entry for December 15, 1773 these words supposed to be addressed to a former ballet dancer who had become a prostitute:

"You know the use of the *condon* . . . The *condon* my daughter, is the law and the prophets."⁹

A London dictionary of street language mentions the word *Cundum*¹⁰ in 1785. Girtanner refers to it in 1788,¹¹ followed by Swediaur in 1801. Ferdy and Bloch believed¹² that the word was derived from the name of a French village

⁵ Daniel Turner, *Syphilis. A Practical Treatise on the Venereal Disease*. London, 1717, p. 74. Fourth ed., London, 1732, p. 107. 1724 ed., p. 84.

⁶ Turner does, however, say that "Dr. Sharp, as well as the *Wolverhampton* Surgeon, with two or three others behind the Curtain, stand Candidates with Dr. C—n, for the Glory of the invention." 1724 ed., p. 84. Turner adds, ". . . the Bait being like to catch Fools, the Secret has since multiply'd."

⁷ *De morbis veneris*, 1736. French translation by Le Pileur.

⁸ *Op. cit.*

⁹ Cabanès, *Les Indiscrétions de l'Histoire*. Paris, 1903, p. 121 f.

¹⁰ [Francis Grose], *A Classical Dictionary of the Vulgar Tongue*. London: Hooper, 1785. A new edition edited with a biographical and critical sketch has been issued by Eric Partridge, London: Sholartis Press, 1931.

¹¹ *Abhandlung*, p. 280 f.

¹² Hans Ferdy, *Limitation volontaire morale*, p. 176, note 1. Iwan Bloch (*Sexual Life of our Time*) repeats this statement. It is probably erroneous.

in the Department of Gers. Later Ferdy rejected¹³ this theory and derived *condom* from the accusative of *condus* (*condere*, to conceal, protect, preserve). Ferdy thus thinks the word a corruption of a Latin form. He is convinced that it is not of English origin unless, perchance, it is a proper name. Richter¹⁴ holds that it derives from the Persian *kendü* or *kondü*, which refers to a long vessel made of the intestines of animals, and used for the storage of corn or grain. Richter surmises that a learned Latin scholar of the Middle Ages jokingly gave the name *condum* to the animal vessels used to prevent conception. A young Harvard philologist who made a *de novo* investigation at my request reported that he could "find nothing reliable"; and concluded that "it must have been originally a proper name."

It is interesting in passing to observe the way the citizens of two nations refuse to accept "the honor" of association with this instrument. The French call the condom "*la capote anglaise*" or English cape; the English have returned the compliment; they call it the "French letter."

There are records of the use and sale of condoms in the eighteenth century and perhaps in the seventeenth. An anonymous writer¹⁵ alleges that houses of prostitution were veritable arsenals of them; and prostitutes are reported to have sold them personally. Mme. Gourdan had special purveyors.¹⁶ De Sade, an eighteenth century writer, says that Madame de Saint Ange recommended condoms and sponges.¹⁷ The latter, it may be remarked, was rarely mentioned in the literature from the

time of the Talmud to Francis Place who led the English propaganda in the 1820's, and whose favorite method it was. Casanova (1725-1798) knew and used condoms; he had several names for them: "The English riding coat," "the English vestment that puts one's mind at rest," "preservative sheaths," or "assurance caps." Elsewhere he refers to "preservatives that the English have invented [sic] to put the fair sex under shelter from all fear." Casanova seems to have been satisfied with their use. The worst that he can say of them is: I do not care "to shut myself up in a piece of dead skin in order to prove that I am perfectly alive." Casanova employed them not only to prevent infection but to avoid impregnation of the women. Moreover, he seems to have tested them for imperfection by inflation with air.

Girtanner avowed that the fish-skin condom (I doubt if there ever was such a thing) was openly sold in Paris, Berlin, and St. Petersburg during the eighteenth century; while Monseigneur Brown, testifying before the first English Birth-Rate Commission, declared that condoms were used in London at the time of the great fire (1666).¹⁸ (It may here be parenthetically remarked that it was probably Girtanner who introduced the error that the condom was named after a physician of the time of Charles II. Girtanner, authority on syphilis, followed Astruc [*De morbo venereis*, Paris, 1738]; but the error does not appear in Astruc.)

In the latter part of the eighteenth century handbills were distributed in London advertising the sale of "cundums," stating where they could be purchased. Grose, a satirist of the period, liked to expose the quacks of his time; and he speaks of a Mrs. Philips "modestly" offering "her wares, prepared with the result of thirty-five years of experience. This public-spirited matron [sic] informs us, that after ten years retirement from business, she has re-

¹³ Hans Ferdy, "Contribution à l'étude historique du 'Coecal-Condom,'" *Chronique Médicale*, xii (1905), 535-537.

¹⁴ Paul Richter, "Beiträge zur Geschichte des 'Kondoms,'" *Zeitschr. f. Bekämpfung d. Geschlechtskrankheiten*, xii, (1911) 35-38.

¹⁵ Rondibilis, *Progrès Médicale*, February 8, 1919.

¹⁶ *Correspondance de Madame Gourdan dite la Petite Comtesse*. Bruxelles: Uzanne, 1883.

¹⁷ Eugene Dühren (Iwan Bloch), *Der Marquis de Sade und seine Zeit*, 1899.

¹⁸ *Report of the National Birth Rate Commission*. Second ed. London, 1917, p. 184.

Mrs. PHILIPS, who about ten years left off business, having been prevailed on by her friends to reassume the same again upon representations that, since her declining, they cannot procure any goods comparable to those she used to vend;—begs leave to acquaint her friends and customers, that she has taken a house, No. 5, *Orange-court*, near *Leicester-fields*, one end going into *Orange-street*, the other into *Cajile-street*, near the *Upper Mews-gate*.—To prevent mistakes, over the door is the sign of the *Golden Fan* and *Rising Sun*, a lamp adjoining to the sign, and fan mounts in the window, where she continues to carry on her business as usual.—She defies any one in *England* to equal her goods, and hath lately had several large orders from *France*, *Spain*, *Portugal*, *Italy*, and other foreign places. Captains of ships, and gentlemen going abroad, may be supplied with any quantity of the best goods on the shortest notice.

It is well known to the public she has had *thirty-five years experience*, in the business of making and selling machines, commonly called implements of safety, which secures the health of her customers: she has likewise great choice of skins and bladders, where apothecaries, chymists, druggists, &c. may be supplied with any quantity of the best sort.—And whereas some person or persons pretending to know and carry on the said business, discovering the preference given to her goods since coming into business again, have industriously and maliciously reported that the *Original Mrs. PHILIPS* is dead, and that such person or persons is or are her successors (which is entirely false and without the least foundation), and hath and doth, or have and do, utter or deliver out in the name of *Philips*, and as from her warehouse, a most infamous and obscene hand-bill or advertisement; the public are hereby assured, that such person or persons is or are a mere impostor or impostors, and that the real original Mrs. PHILIPS lives and carries on her business in *Orange-court* aforesaid, and not elsewhere (as can be testified by many who daily see her behind her counter), and that she hath no concern whatsoever in the business published by such hand-bills of theirs, notwithstanding the impudent use of her name thereto affixed; and neither prepares or vends, or ever did or ever will prepare or vend, any other goods than those above specified. She also sells all sorts of perfumes. The following lines are very applicable to her goods:

*To guard yourself from shame or fear,
Votaries to Venus, hasten here;
None in my wares e'er found a flaw,
Self preservation's nature's law.*

FIG. 4. MRS. PHILIPS'S EIGHTEENTH CENTURY HANDBILL OR ADVERTISEMENT

(F. Grose's *Guide*, 1796, pp. 10–11.)

sumed it again, from representations, that since her recess, goods comparable to what she used to vend cannot be procured."¹⁹ It seems that a handbill or

¹⁹ [Francis Grose], *A Guide to Health, Beauty, Riches and Honour*. Second ed. Lon-

advertisement issued as early as 1776 by Mrs. Philips offered sheaths for sale at the Green Canister in Half Moon Street in the Strand; and that after having acted, 1796, p. iii. (First ed. 1783 according to British Museum Catalogue.)

MARY PERKINS, successor to Mrs. Philips, at the Green Canister in Half-moon-street, opposite the New Exchange in the Strand, London, makes and sells all sorts of fine machines, otherwise called C——MS.

Dulcis odor lucri ex re quolibet.

De quel coté le gain vient.

L'odeur en est toujours bonne.

Also perfumes, wash-balls, soaps, waters, powders, oils, essences, snuffs, pomatums, cold cream, lip-salves, sealing-wax.—N. B. Ladies' black sticking-plaister.

NUMBER XVII.

WHEREAS some evil-minded person has given out handbills, that the machine warehouse, the Green Canister, in Half-moon-street in the Strand, is removed, it is without foundation, and only to prejudice me, this being the old original shop, still continued by the successor of the late Mrs. Philips, where gentlemen's orders shall be punctually observed in the best manner, as usual.

N. B. Now called Bedford-street; the Green Canister is at the seventh house on the left hand side of the way from the Strand.

FIG. 5. MRS. PERKINS' HANDBILLS
(F. Grose's *Guide*, 1796, p. 13.)

quired a competence she retired from business.²⁰ She evidently sold out to Mrs. Perkins. It is difficult to piece together, from the conflicting evidence preserved by Grose, the facts regarding subsequent events. Mrs. Philips probably re-entered business after selling out to Mrs. Perkins, and this caused resentment on the part of the latter. This would explain the war of handbills (Figures 4, 5, and 6). Mrs. Philips

²⁰ [Francis Grose], *Classical Dictionary of the Vulgar Tongue*. London: Hooper, 1785, has the following to say under:

CUNDUM, the dried gut of sheep, worn by men in the act of coition, to prevent venereal infection, said to have been invented by one Colonel Cundum. These machines were long prepared, and sold by a matron of the name of Philips, at the Green canister in Half-moon-street, in the Strand. That good lady having acquired a fortune, retired from business; but learning that the town was not well served by her successors, [she], out of a patriotick zeal for the public welfare, returned to her occupation, of which she gave notice, by diverse hand bills, in circulation in the year 1776.

Note that these "machines" are mentioned only as preventives of infection. It is highly probable, however, that they were used also in the eighteenth century for the prevention of conception. The 1823 edition of Grose's *Dictionary* omits this word.

opened her new shop at 5 Orange Court near Leicester Fields.

Interesting from the standpoint of diffusion is the statement that she has "lately had several large orders from France, Spain, Portugal, Italy and other foreign places." She boasts in her advertisement, of thirty-five years of experience. A wholesale trade seems to have been operated by her, for we learn that she is prepared to supply "apothecaries, chymists, druggists, etc." Another handbill states that "Ambassadors, foreigners, gentlemen, and captains of ships, &c. going abroad, may be supplied [from "Mrs. Philips's Warehouse"] with any quantity of the best goods [condoms] in England, on the shortest notice and [at] the lowest price."

Thompson, who is aware of Mrs. Philips's trade, says that condoms "were originally made from the dried gut of sheep and first [sic] sold at two [London] taverns near Covent Garden, viz., the *Rummer* and the *Rose*, the latter hostelry in Russell-street being a famous meeting place in Stuart times."²¹ Since the statement is un-

²¹ C. J. S. Thompson, *Quacks of Old London*, 1928, p. 273.

This advertisement is to inform our customers and others, that the woman who pretended the name of Philips, in Orange-court, is now dead, and that the business is carried on at

Mrs. PHILIPS'S WAREHOUSE,

That has been for forty years, at the Green Canister, in Bedford (late Half-Moon) Street, seven doors from the Strand, on the left hand side,

STILL continues in its original state of reputation; where all gentlemen of intrigue may be supplied with those Bladder Policies, or implements of safety, which infallibly secure the health of our customers, superior in quality as has been demonstrated in comparing samples of others that pretend the name of *Philips*; we defy any one to equal our goods in England, and have lately had several large orders from France, Spain, Portugal, Italy, and other foreign places.

N. B. Ambassadors, foreigners, gentlemen and captains of ships, &c. going abroad, may be supplied with any quantity of the best goods in England, on the shortest notice and lowest price. A most infamous and obscene hand-bill, or advertisement, in the name of *Philips* is false: the public are hereby assured that their name is not *Philips*, but this is her shop, and the same person is behind the counter as has been for many years.—The following lines are very applicable to our goods:

*To guard yourself from shame or fear,
Votaries to Venus, hasten here;
None in our wares e'er found a flaw,
Self-preservation's nature's law.
Letters (post paid) duly answered.*

FIG. 6. ADVERTISEMENT OF MRS. PHILIPS'S WAREHOUSE
(F. Grose's *Guide*, 1796, p. 12.)

documented, the source is unknown. No one knows of what material they were "first" made, much less at what particular place they were "first" sold.

The eighteenth century sheath was a descendant of the linen sheath of Fallopius, if not of the Roman, goat-bladder sheath reported by Antoninus Liberalis. After Fallopius the caeces of lamb, sheep, calves, goats, and perhaps other animals were employed.

Widespread use of the condom, however, for prophylactic and contraceptive purposes, had to await the vulcanization of rubber first successfully executed by Gordon and Hancock²² in 1843-44. The vulcanization of rubber has already

revolutionized transportation (automobile tires). It is calculated to revolutionize also the sexual practices of mankind. What it is likely to do to morality, as that term is commonly understood, I leave to the ethical and religious theorists. The introduction of rubber sheaths so materially lowered the cost that the distribution of these instruments must have increased enormously. Thereafter virtually every late nineteenth century treatise and certainly every twentieth century treatise on contraceptive technique, and, to a lesser extent, on sexual diseases, give it a prominent place. For a consideration of modern aspects of the subject, including technological and merchandizing changes and an estimate of production in the United States, see the article on CONDOM.

²² It seems difficult to credit the statement of Streich (*Sudhoff's Archiv f. Gesch. d. Med.*, xxii, 1929, 210) that the rubber gians condom was first introduced into Europe from America through the World Exposition held in Philadelphia in 1876.

CONTRACTATION (Latin, *contractare*, to handle), forepleasure, the sexual dalliance or preliminaries leading to tumescence, followed by detumescence. In popular language: touching, necking, spooning (*contractation*) produces erection of the penis (*tumescence*) with the urge for orgasm or seminal discharge (*detumescence*). The term *contractation* was devised by Albert Moll.

CONTUBERNALES, originally applied to Roman soldiers who occupied the same tent, the term was extended to intimate friends who dwelt under the same roof, and colloquially to two slaves, or to a citizen and slave, who could not contract a legal marriage but lived together as husband and wife.

CORINTHIANIZE, TO (Greek: κορινθιάζωμαι). Liddell and Scott, in their *Greek-English Lexicon*, define the word as: "to practise whoredom, because Corinth was famous for its courtezans." See Aristophanes' *Frogs*, 133. This renown of Corinth had passed into a popular proverb or two: "It is not permitted to all the world to go to Corinth"; "it is not with impunity that one goes to Corinth." The former proverb, Aristophanes in his *Plutus* explains by remarking that "the women of Corinth repel the poor and take the rich," while Strabo tells of how merchants and sailors who came to the city for the festivals of Aphrodite lost all the money they had before leaving.

CORROBBOREE. An aboriginal dance of Australia, accompanying the rites of male pubic initiation.

Brough Smyth, *The Aborigines of Victoria*, etc., London, 1878, vol. i, pp. 57 ff.

CORVUS, a raven. In antiquity, *corvus* meant both a raven and a fellator, as ravens were believed to copulate by mouth.

Aristotle (*de Generatione Animalium*, iii, 6) effectively disposes of the legend: "For there are some who say that the raven and the ibis unite at the mouth, and among quadrupeds that the weasel brings forth its young by the mouth; so

say Anaxagoras and some of the other physicists, speaking too superficially and without consideration. Concerning the birds, they are deceived by a false reasoning, because the copulation of ravens is seldom seen, but they are often seen uniting with one another with their beaks, as do all the birds of the raven family; this is plain with domesticated jackdaws. Birds of the pigeon kind do the same, but, because they also plainly copulate, therefore they have not had the same legend told of them. But the raven family is not amorous, for they are birds that produce few young, though this bird also has been seen copulating before now. It is a strange thing, however, that these theorists do not ask themselves how the semen enters the uterus through the intestine, which always concocts whatever comes into it, as the nutriment; and these birds have a uterus like others, and eggs are found in them near the hypozoma."

Even the credulous Pliny (*Naturalis Historia*, x, 15) follows Aristotle in his skepticism: "It is a vulgar belief, that they couple, or else lay, by means of the beak; and that, consequently, if a pregnant woman happens to eat a raven's egg, she will be delivered by the mouth. It is also believed, that if the eggs are even so much as brought beneath the roof, a difficult labor will be the consequence. Aristotle denies it, and assures us in all good faith that there is no more truth in this than in the same story about the ibis in Egypt; he says that it is nothing else but that same sort of billing that is so often seen in pigeons."

Martial (xiv, 74) thus protests at the bird's evil reputation: "O raven saluter, why are you held to be a fellator? No virile organ ever entered your mouth."

COUSIN GERMAN, a cousin in the first generation, a first or full cousin (Canon Law); in French, *cousin german*.

Edward Burnett Tylor (*Researches into the Early History of Mankind*, 1865; 1878^a): "In the civilized world, the prohibition from marrying kindred has usually stopped short of forbidding the marriage of cousins german."

COUVADE. Männerkindbett, Man Childbed, etc. The etymology of the word has been the object of some debate. The term is derived from the French verb, *couver*, to brood, to hatch, Latin *cubare*, to lie down. (Provençal, *covado*.) An attempt has been made to associate it with the Spanish *cueva*, a cellar, grotto or vault, and *encouvar*, to put in a cellar, in the sense of a "covering" or withdrawing of the husband; but this is hardly a sound etymology.¹

The word refers to the extremely widespread custom among more or less primitive peoples, in accordance with which, at the time of childbirth, the husband takes to his bed and simulates all the pains (which he sometimes actually appears to feel) that the wife undergoes; while, following the birth of the child, he keeps his bed and receives all the attentions commonly bestowed upon the woman in such a case. In some instances, as among the Caribs of the West Indies, intense physical suffering, as by scarification and the like, is inflicted upon the one undergoing couvade.

That this custom, as weird a one as it may seem, has a deep-lying folk basis is indicated by a number of popular sayings. The French, for example, will remark: "*Il se met au lit quand sa femme est en couche*"; and the Irish will say: "You'll have to go to bed with the old woman and be nursed as they did years ago."

While couvade has naturally tended to die out before the encroaching tide of world civilization, there yet would seem to be little doubt that it has existed down to comparatively recent times. An eight-day couvade was not so long ago observed in the Balearic Isles;² and although there has been much argument as to its contemporary survival among the Basques or in the Pyrenees region, it is said to have been still common among the inhabitants of Navarre down to the beginning of the nineteenth cen-

tury.³ There are vestigial traces of it, also, in the Russian Baltic provinces and on the island of Marken in the Zuydersee.

In addition to popular sayings, there are certain persisting superstitions which point to the custom. Among these may be mentioned the putting of men's garments on the woman to ease the pain of childbirth,⁴ and the belief not uncommon in the British Isles, to the effect that the discomforts of pregnancy may be transferred to the husband (the "married man's toothache").⁵ The element of witchcraft enters, with the forceful transference of pain to the father by nurse or midwife, as in Scotland and Ireland.

Here, the writer may contribute an observation from his own mid-western American (central Illinois) boyhood, regarding a current belief to the effect that if a man became nauseated following coitus, it meant that he had rendered the woman pregnant. (This was in the early 1900's.)

It may now be asked, what is the origin and meaning of this peculiar rite or custom? The word, couvade, was first used by Sir E. B. Tylor; and Tylor, H. Ling Roth, and Sir J. G. Frazer remain, perhaps, the three outstanding authorities on the question.⁶ For a concise and thoroughly scholarly summary, the reader may be referred to Warren Royal Dawson's *The Custom of Couvade*;⁷ and for the most recent and psychoanalytic interpretation, he should turn to Theodor Reik's psychoanalytic studies in ritual, published with an Introduction by Sigmund Freud.⁸

The whole question of couvade, as will be seen, is closely associated (at

³ A. L. J. de Laborde, *Itinéraire descriptif de l'Espagne*, 6 vols., Paris, 1834 (3rd edition), Vol. I., p. 273. (On couvade among the Cantabrians.)

⁴ J. B. Thiers, *Traité des superstitions*, Paris, 1679, p. 327.

⁵ W. S. Blackman, *Traces of Couvade in England*, Folk-Lore, London, 1918, pp. 319-20. On superstitions, in addition to Thiers, *Op. cit.*, see J. W. Wolf, in *Beiträge zur deutschen Mythologie*, Leipzig, 1852, Bd. 1, p. 251.

⁶ For Roth on the signification of Couvade, see the Journal of the Anthropological Institute, London, 1893, pp. 204-43. For Tylor: *Researches into the Early History of Mankind*, London, 1865, pp. 287-97.

⁷ See Note 2.

⁸ Theodor Reik, *Ritual, Psychoanalytic Studies*, with a Preface by Sigmund Freud, London, 1931 (translation). See the same author's *Die Couvade und die Psychogenese der Vergeltungsfurcht*, Imago, Leipzig, 1914, Jahrg. 3, pp. 409-55.

¹ See note at the beginning of Warren Royal Dawson's *The Custom of Couvade*, 1929.

² T. de Aranzadi, *De la Couvade en España*, *Anthropos*, Vienna, 1910, pp. 775-78.

least, for anthropologists of the Diffusionist school) with the problem of the dispersion of culture. It is, accordingly, important to consider not merely the chronologic, but the geographic chart for the custom.

Observations of couvade date from the beginning of the Christian era. Reverting to classic antiquity, we find that it was unknown, save as a foreign custom, on the mainland of Greece. It is as a curiosity reported from abroad that Greek writers speak of it. A form of it, however, existed on the island of Cyprus, as may be seen from Plutarch's *Theseus*,⁹ where we read of the man imitating the cries of the woman in travail. It would seem, on the other hand, that this was simply a part of the religious ceremonial supposed to have been instituted by Theseus in commemoration of Ariadne's fatal birth-throes. Then, there is Herodotus,¹⁰ who speaks of the infliction upon the men of Scythia of a female "disease." This, once more, is somewhat dubious; and finally, a relation has been seen to the Athenian *amphidromia*, or festival celebrating the naming of a child, at which the parents' friends carried the infant around the hearth.¹¹

Among the Amazons of West Libya, Diodorus Siculus informs us,¹² the men were in the habit of rearing the children, looking after the household tasks and performing other menial duties. This would indicate a gynecocracy, rather than an immediate connection with couvade. The same author is our authority for crediting the existence of the custom in Corsica, in the first century A.D. There is no evidence that it existed in Sardinia.¹³

Strabo, in his *Geography*,¹⁴ assigns an Iberic origin to the rite. It is certain, in any event, that the tradition continued down the Middle Ages. We find a reflection of it in the *Aucassin and*

Nicolette; and in one of the old fabliaux, we read of the king's being "*au lit et en couche*." Hence it was, the expression, "*faire la couvade*," grew up. Couvade is also embodied in Celtic legend, mention of it being found in manuscripts of the twelfth and fifteenth centuries. What we have here is the twins of the mythic Macha, Macha's wail, and most significant of all, the "nine-night week of the Ulates," during which the men "suffered" for five days and four nights. The legend is obviously of mythologic origin, and is reminiscent of Herodotus.

The recent observance of the custom in the Balearic Isles has been noted. Couvade has been believed to have survived among the Besques of modern times.¹⁵ Authorities have denied that it exists in the Spain of to-day, although allusions to it will be found in the guidebooks. The point has been made that there is no likelier spot for its survival than the Pyrenees but Wentworth Webster dismisses such a supposition,¹⁶ while Ripley is skeptical.¹⁷

In Africa, couvade is rare. No trace of it is to be met with in ancient or in modern Egypt. Elsewhere upon the continent, there is to be discovered no more than a modified form, or the presence, simply, of the underlying idea. A husband, for instance, in certain tribes, is careful not to have an accident that would cause his wife to miscarry. It is chiefly in the White Nile region, in

¹⁵ There are a number of works which may be referred to on this point: Francisque Michel, *Le Pays basque, sa population, sa langue, ses mœurs, sa littérature et sa musique*, Paris, 1857, p. 201; the work of Laborde, referred to in Note 3; available in English translation, *View of Spain*, 5 vols., London, 1809, Vol. i, p. 383; Julien Vinson, "*La Couvade de chez les Basques*," in Hovelacque and Vinson's *Etudes de linguistique et d'ethnographie*, Paris, 1878; J. Brissaud, "*La Couvade en Béarn et chez les Basques*," *Revue des Pyrénées*, Toulouse, 1900, pp. 225-239 (a purely negative and unscholarly statement); the *Historia de las naciones Bascas*, 3 vols. Auch, 1818, Vol. III., p. 46; A de Quatrefages, *Souvenirs d'un naturaliste*, *Revue des Deux Mondes*, Paris, 1850, t. v., p. 1084; A. Z. Ripley's *The Races of Europe*, London, 1900, p. 182; and Wentworth Webster's *Basque Legends*, London, 1877, p. 232.

¹⁶ *Op. cit.*, preceding note.

¹⁷ *Op. cit.*, Note 15.

⁹ *Theseus*, 80.

¹⁰ i. 105.

¹¹ See Aristophanes' *Lysistrata*, 757.

¹² xi, 44.

¹³ Dawson is authority for this statement.

¹⁴ *Geographia*, Bk. iii, cap. iv, § 17.

the South Sudan and among the Dinkas that couvade is actually practised, with traces apparent among the Goumbi of the Nigeria region and the Bantus and Bushongo of the Congo. It is possible, too, that it exists among the Boloki (Congo), in Madagascar, and among the Nandi (East African) tribes.

For the early existence of couvade in Asia, we are indebted to the statements of Apollonius Rhodius and Valerius Flaccus.¹⁸ It has been reported from many regions of India, and Marco Polo described the custom as he viewed it in Chinese Turkestan.¹⁹ Butler's lines in *Hudibras*²⁰ may be recalled:

For the Chinese go to bed
And lie-in, in their ladies' stead.

But it would appear that the real Chinese do not practise it, although the aboriginal Maiotzu did. The custom once flourished, likewise, among the Ainu of Japan and in Kamchatka. In the Nicobar Island group, Roth states, couvade was known as *falngendre*. There are various forms of it in the Malay peninsula; and despite the fact that there is no record of it on the large island of Sumatra, it is found on some of the smaller islands along the Sumatran coast. In Borneo, the Land Dyaks afford an exemplification of it.

A rationalized couvade ("sympathetic magic") is reported among the Kayans of Borneo (by Charles Hose²¹). In the Philippines, the custom is observed in some of the North Luzon tribes. It occurs in the Moluccas and other islands between the Celebes and New Guinea, and in the islands of Timor Laut. There is no evidence of it on the mainland of New Guinea, although related ideas may be discerned there.

Dawson says that he has been able to find no record of couvade in Australia, but it is encountered in Melanesia, San Cristoval and the Solomon Islands; also on the Banks Islands, in the New Hebrides, and on Leper's Island.

¹⁸ Valerius Flaccus, *Argonautica*, xi, v, 147-9, Teubner series, Leipzig, 1852. Apollonius Rhodius, *Argonautica*, xi, 1010-14, Teubner series, Leipzig, 1913.

¹⁹ Henry Yule, *The Book of Ser Marco Polo the Venetian*, London, 1871.

²⁰ *Hudibras*, iii. Canto i, 70.

²¹ *Natural Man, a Record from Borneo*, London, 1926.

In the Western Hemisphere, an isolated form of couvade has been discovered in Greenland. Upon the North American continent, it seems confined to California, with traces in Ontario and among the New Mexican Indians. Bancroft describes it among the central California Indians.²² If the custom is rare in North America, there are many instances of it in the Central and South American regions. Indeed, it is here that couvade would seem to have attained its highest degree of development. This is especially true, apparently, among the Fuegians, although details are lacking. Information on the subject of couvade in Central and South America is provided by the accounts of many missionaries and writers of the seventeenth and eighteenth centuries. The rite is visible to this day in certain districts, the West Indian Caribs being among those who practise it. It exists in the Pearl Islands, in the Gulf of Panama, and among the Macusis of Guiana, the Arawaks of Dutch Guiana, the Aca-wois, the Wapiana, the Bakairi of the Xingu River district, the Ipurinos of Bolivia, the Indians of the Rio Yupurá region, the Botocundos, the Passe and Juri tribes in the lower River Icaá region, the Mundzucu, the Tupé, the Coimbas of Peru, the Coroados of Brazil, the Jivaro Indians of Ecuador, the Piojés, the Tapuyos, the Abipones, the Chiriguano of the Pilcomayo River district in Paraguay, etc. It was an institution among the Petivares of Brazil in the seventeenth century, and we find Southey referring to it.²³

As stated above, the question of couvade is of particular interest by reason of its being in a manner bound up with that of the dispersion or distribution of human culture. In this respect, it has an importance similar to that of such institutional forms as mummification, tattooing, ear-piercing, etc. If we seek its cradle or point of origin, we

²² H. H. Bancroft, *Native Races of the Pacific States of North America*, 5 vols., London, 1875, Vol. I., pp. 391, 412, 585.

²³ R. Southey, *History of Brazil*, 3 vols., London, 1810-19, Vol. i, p. 238.

shall have to eliminate, as has been seen, Greece and Egypt.

It is, however, to some land not far away that the Diffusionist would look, possibly, as Dawson suggests, to Mesopotamia, perhaps to Cyprus. Although Dawson does not put it in so many words, he appears to favor Cyprus as the starting-point. From that island, skipping Sardinia, it would have spread to Corsica, to Africa, and to the Iberic peninsula; while from Spain, it would have made its way upward, to France, to Germany, across the Channel to Britain, etc.

In Africa, leaving no trace in Egypt or Numidia, the custom somehow reached the White Nile, South Sudan and Congo regions. Another line followed the Red Sea littoral, through the Bab el Mandeb and across the Persian Gulf to the Malabar coast of India, and from there on, to China, Japan, the islands of the Archipelago, Australia, etc.

It is significant, as Dawson points out, that, if we exclude Greenland and Tierra del Fuego, the custom of couvade geographically lies directly within, or within the influence of, the heliolithic track. The Diffusionist may use this as an argument against those who assert the independent evolution of various cultures, as based upon the old "human psychology is very much the same the world over" idea.²⁴

When it comes to explaining its meaning, we meet with more than one ingenious and sometimes laughable theory. One scarcely need mention such a view as that of the Frenchman, Lafiteau, who saw in couvade a recollection of original sin.²⁵ A good deal more amusing one, coming as it does from a scholar of repute, is the late F. Max Müller's quite unscholarly attempt (blithely brushing aside the body of anthropological data) to explain the custom as an instance of the "henpecking" of the male by womenfolk during the childbirth period.²⁶

Couvade has also been connected with androgyny,²⁷ and with the presence of functional male mammary glands. It has been seen as an example of the vanity of men and the submissiveness of

women,²⁸ as an adoption ceremony (the claiming of paternity),²⁹ as a turning-point between a matriarchal and a patriarchal system of society,³⁰ and as the expression of a physical bond between father and offspring.

The theory last mentioned, related to post-natal and "contagious" magic, originally put forward by Tylor, was later abandoned by him in favor of the Bachofen view of couvade as a matriarchal-patriarchal transition. But despite the fact that its propounder saw fit to disown it, the Tylor theory has been taken up and adhered to by Fraser, Roth, Dr. E. S. Hartland, Westermarck and others.

Dawson believes that the meaning was modified in the course of the custom's transmission, and that there is no one meaning for all races. According to this authority, our knowledge on the subject is summed up by the word, "*Ignoramus*."

As for the modern Freudian, he sees couvade as a manifestation of the father-son fear of retaliation, and ultimately, as a step to a higher father-son relationship.

For the psychoanalytic thesis the reader may once again be referred to the Reik volume, with its preface by Freud.

J. Bouwman, *La couvade*, Revue Anthropologique, Paris, 1925, année 35, pp. 49-70; Paul Hermant, *La Couvade*, Bull. Soc. roy. belge de géographie, Bruxelles, 1906, v. 30, pp. 1-15; J. P. B. de Josselin de Jong, *De Couvade*, Amsterdam, 1922; H. Ploss, *Das Kind in Brauch und Sitte der Völker*, Leipzig, 1911 (3rd ed.), pp. 191-211; Ploss, *Das Weib*, 1897; McGee, *The Seri Indians*, 17th Rep. Bur. Am. Ethnol.; and Tylor, *On a Method of Investigating the Development of Institutions*, Journal of The Anthropological Institute, Vol. xviii, pp. 254ff (1889).

S. P.

CYBELE. A Phrygian goddess whose rites, associated with sacerdotal castration and sexual orgies, became general throughout Greece and Asia Minor. Her first place of worship was Pessinus. In Hellas, her ritual coalesced with that of Rhea, the Earth Mother, and was carried to Rome as that of the Idaean Mother (from A. U. C.

²⁴ See A. H. Keane's article on *Couvade*, Cassell's Encyclopedia, London, (without date), Vol. iii. See, also, the same author's *Ethnology*, Cambridge, 1896, pp. 219, 368.

²⁵ Joseph Lafiteau, *Moeurs des sauvages américains*, Paris, 1724, Vol. i, p. 49.

²⁶ F. Max Müller, *Chips from a German Workshop*, London, 1867, p. 274ff.

²⁷ See *Notes and Queries*, London, 1869, 7th series, Vol. viii, p. 442.

²⁸ P. Firmin, *Description de Surinam*, Amsterdam, 1769, Vol. i, p. 81.

²⁹ Tautain, "*La Couvade*," in *L'Anthropologie*, Paris, 1896, t. vii, pp. 118-9.

³⁰ J. J. Bachofen, *Des Mutterrecht*, Stuttgart, 1861, 2nd. edition, 1897, pp. 17, 225.

547 on). The goddess took her name from Mt. Cybela, near Celaenae, in Phrygia (see Strabo, Casaubon's Pages, 567; Apollodorus, iii, 5, 1). Mention of her will be found in Euripides, *Bacch.*, 79, and Aristophanes' *Birds*, 877.

Cybele is best known from her priests, who, from the original Atys, the goddess' youthful Phrygian lover, down to late classic times, did not fail to mutilate their sexual organs. These priests were known as *Galloi*, from the Phrygian river, Gallos, (now the Gatipo), a tributary of the Sagaris; the waters of the Gallos were supposed, when drunk, to bring madness; and the ministrants of Cybele, in their insane ravings, would end by slashing themselves.

See Ovid, *Fasti*, 4, 364; Pliny, v, 32, 42; *ibid.*, vi, 1, 1; *ibid.*, xxxi, 2, 5; also Claudius Claudianus in Sextus Rufus, 2, 263. The term, *gallos*, as a result, came to be employed for a eunuch in general, as in the Greek *Anthology*. An allusion to these priests will be found in Virgil's *Aeneid*, x, 220; see also: Pliny, xi, 49, 109, and xxxv, 12, 46 end; Lucretius, ii, 615; Horace, *Satires*, i, 2, 121; Martial, 3, 81 and 11, 74; Cf. Quintilian, vii, 92, 2; Catullus, on account of their emasculated condition, comically alludes to them in the feminine, as *Gallae* (Catullus, 63, 12 and 34); Ovid, *Amores*, ii, 13, 18, alludes to the *Gallica turma*, or troop of Cybele's servitors. On Cybele in general at Rome, see Propertius ii, 17, 35; *ibid.*, iii, 22, 3; *ibid.*, iv, 7, 61; Phaedrus, iii, 17, 4; *ibid.*, iv., 1, 4. Allusions to Cybele's lover Atys (Attis or Athys) will be found in Catullus, 63; Ovid's *Metamorphoses*, x, 104; *Fasti*, iv, 223; Macrobius, *Saturnalia*, 1, 21.

At Rome, Cybele was also known as Ops and as Mater Magna, or Great Mother. As Ops, she was the goddess of plenty, of power and riches; she was the wife of Saturn and patroness of husbandry, being identical with Terra (cf. the Greek Rhea). See Varro's *De lingua latina*, v, 10, 57 and 64; Macrobius, *Saturnalia*, 1, 10; Ovid, *Metamorphoses*, ix, 497. Finally, as the goddess who was worshipped on Mt. Ida, Cybele was Idaea, or the Idaean Mother, as in the *Aeneid*, x, 252; Ovid, *Fasti*, iv, 182; etc.

DANCES, NATIVE SEX. All over the world among native peoples quite definite instruction was given to girls and young women on the technique of sexual intercourse—usually by means of the Sex Dances. H. Crawford Angus, one of the first Europeans to visit and live with the Azimbabwas of Central Af-

rica reports that at the first sign of menstruation the young girl is taught the mysteries of womanhood and shown the different positions most suitable for satisfactory sexual intercourse. When the menstrual period has passed, a dance of all the women of the tribe is arranged in honor of the girl, and by action, songs and by dances she is instructed in all wifely duties and pleasures.

The young girl is made to go through a mimic performance of sexual intercourse, and if the movements are not enacted properly, because of timidity or bashfulness or otherwise, one of the older women takes the girl's place in the center of the ring of women, and shows her practically how to perform her wifely functions. The fruits of this instruction are sexual happiness and race welfare. The fruits of non-instruction are seen in civilized life—sexual unhappiness and race deterioration. The remedy is not a reversion to savagery, but the basing of our marital life on the natural principles embodied in the working of the Life Force itself—the Life Force which still waits outside the civilized mind, too big for our understanding, the Force which found its fundamental expression in native Sex Dances.

Speaking generally, there are four types of sex dance practised by native women in different parts of the world, which need to be described here. There is first, the Hip Vibration Dance, which is a mass dance; second, the Dance of the Pelvis (mainly a buttock rather than a belly dance), sometimes called the *Tana* Dance (*Ta* means a stick or staff to strike or dash down, or the striking of; and *Na* means to be satisfied with); this is the Dance of the Bride-Elect; third, the Sun Worship Dances, which were dances involving the expansion and retraction of the abdominal wall; really they were centralized from the abdominal area, thus involving the waking up of the solar plexus; and fourth, the Eugenic Dance, always preceded by an oration on Race Immortality.

The Hip Vibration Dance is done by native women, as a mass dance, the leader usually standing on the right flank, sometimes at the back of the dancers, and giving instructions. This dance was forbidden for married women when they were known to be pregnant or desirous of becoming so, as the strenuous movements of the lower half of the trunk, and particularly the vibration of the buttocks, were liable to cause early miscarriage. In these native women's dances intestinal activity was associated in the mind with sexual efficiency, and sexual efficiency with race improvement. The words of the leader (a traditional song) indicate this.

I. POI OR VIBRATION DANCE.

Free Translation of words of Song which accompanies Dance.

Leader says (all standing):

1. Now all turn to me.
2. Stretch your arms out towards me (palms down).
3. Now show your powers in hip rolling (swings begin).
4. Now vibrate your hips (arms still stretched out but palms uppermost, hands vibrating up and down).
5. Now move your body (tilting hips different ways, postures from leader).
6. Now shake your whole body (greater bodily movement).
7. Roll your eyes (in unison).
8. Break your waist, that is, rock pelvis from side to side (with pauses).
9. Now quickly to me, that is, quickly tilt pelvic basin forward in regular rhythm.
10. Quickly and more quickly towards me (that is, repeat same movement more quickly).
11. Now vibrate (shake) your hips (cease 10, begin 11; all sinking).
12. Lower your body (sink with rhythmic hip-swaying movements to earth).
13. Rock the pelvis (rock pelvis from side to side with pauses; knees flexed).

14. Attention, tilt pelvis towards me, quick time, with pauses.
 15. Vibrate (shake) your hips.
 16. Contract your inner man (squeeze bowels in imitation of defecation, this repeated slowly 6 or more times, then 6 or more times quickly).
 17. Attention, now arise (all standing up).
 18. Now clench your fists (as in grasping canoe paddle and pushing it well down; retract abdomen, contract buttocks, tilt pelvis forward).
 19. Attention! Grasp the Sacred Phallus.
 20. Push (shove) hard (into female genital canal as though grasping canoe paddle which represents the Sacred Phallus).
 21. Now shove hard, first to right, then to left, contracting each side of hips, fists clenched, right-left-right-left, etc.
 22. Now throw out buttocks (behind), abdomen depressed, arms raised, fists clenched, as though shoving paddle upwards.
 23. Ease down (hands and arms to first position).
 24. Now vibrate (shake) your hips.
 25. Resume first position (facing audience; Leader has walked around).
- Finale: Ah (Ah—hiss), swing leg upwards and forwards with hand under flank (really high kicking movement, right leg—left, etc.).

If dancers are seen to be tiring at any time, Leader makes them walk around slowly, with quarter-turn of each hip alternately, till they regain their breath.

II. THE DANCE OF THE BRIDE-ELECT

The following is a short free translation of one of the traditional native songs accompanying this dance—a singularly beautiful description of perfect sexual union:

Instructor (Priest or Chieftainess)

1. Prepare your skin (vibration). Go to your place.
2. Walk (with hip swings) as though to Huge Sacred Phallus.

3. Vibrate your body. Ardently wish the phallus was entering you.
4. Behold! It is standing to greet your wish, royally erect, like the rising sun.
5. Vibrate your body. The power of your ancestors is concealed within you (dancers' responses).
6. Wonder of wonders! My depths are entered by the Royal Phallus.
7. Ah! What glorious sexual union has come to me.
8. Let us clamp our bodies together—tighter and tighter—closer and closer.
9. Lean to the left side.
10. Lean to the right side.
11. Ah!! Ah!!! What glorious sexual union has come to me. Ah . . . (ejaculation).
12. We tremble at the knees.
13. He becomes like sawdust: I am breathless: we collapse.
14. Soon he boasts to me—he will rise again—soon.
15. We close together in another glorious sexual union.
16. Still closer and closer—he will fill me with great progeny.
17. Ah, ah, behold! Great and Royal generations will arise (from this union).
18. Again we tremble at the knees.
19. We salute our posterity (swing to the left).
20. (Swing to the right.) Soon we will clamp our bodies together again.
21. Hurrah! he has risen again: he goes down my path: I dance with joy.
22. He moves closer and closer, deeper and deeper into me.
23. Still closer—still deeper.
24. Hurrah—he goes down my path—I dance with joy.
25. I groan as he presses closer and closer, deeper and deeper.
26. He cleaves me royally—I am amazed how gloriously he cleaves me.
27. Behold he (his life) gushes forth again.
28. I let go the juices of my loins.
29. I give up every drop.
30. I will soon return to him—restored

and refreshed.

31. Now my eyes are full and my throat swollen.
32. I am forced to my knees—I collapse.
33. My navel and chest sink inwards.
34. I open and shut my mouth with huge breaths.
35. I long for the Sacred Phallus again—strong, erect, glorious. Ah! I faint with longing—I sleep. . . .

III. SUN WORSHIP DANCES

These have a general and also a particular function in stirring up the abdominal and pelvic organs. The effects are produced partly by the postures of the body, and partly by the movements of the abdominal wall. The feeling of well-being which follows the performance of these body dances is mainly due to the massage of the solar plexus as well as of the great abdominal blood vessels, through the contraction and relaxation and rotary movement of the belly wall. The solar plexus is a great network of nerves and ganglia at the back part of the stomach. It is formed by the greater and a portion of the lesser splanchnic nerves and the right pneumogastric nerve (the vagus), giving off nerves to all the abdominal viscera. Behind this great nerve center is the large blood reservoir formed by the abdominal aorta with its branches (the celiac axis) to the stomach, liver, spleen and other abdominal organs. It is well named the Solar (or Sun) Plexus.

Many Eastern races regard it as the source of life, heat and energy, contending that it is to the human body precisely what the visible Sun is to the solar system; they regard it as the center of life from which all energy and power flow. It is also regarded as the body's great breathing center, and many Oriental cults practise deep and systematic breathing in order to "wake up" the Solar Plexus by using the diaphragm and contracting certain abdominal muscles as in the native dances. Whether this would help to prevent or remedy those most unhappy conditions of civilized life—real frigidity in women and impotence in men—it is impossible

to determine without practical tests: what we do know is that these conditions are apparently non-existent in native life.

IV. EUGENIC DANCES

Tribal or inter-tribal dances performed at seasonal gatherings, or after war—definitely Eugenic Dances—were preceded by an oration from the member of the priestcraft charged with the promotion of Race Immortality. The following is a condensed translation of such an oration:

"My Children, I have looked into the future, and this is the Sacred Knowledge I would impart. Ours is a great and wonderful land—its fertility unbounded. It could maintain a large and powerful nation: at present our nation is small and weak. The remedy lies in your hands. Yours is the sacred duty of reproduction—especially that of the younger men and women. It is more than a duty: it is an honor and a trust to our ancestors, to ourselves, to our descendants.

"We are members of a great race. Within us is the means for the everlasting continuance of that race. If we fail, the race may diminish or be extinguished. We are the bearers of the torch of life—upwards and onwards. Those selected for reproduction are those worthy of this—the highest of all honors. Each and all such are in charge of the quality and character of the race. In the body of every one of you there live all your ancestors and all your descendants: the born and the unborn; through you the dead may live for ever—you hold the power of race-life or race-death. Each generation must renew the race-life afresh—or we all perish. . . .

"How shall we perform this duty? First, the finest men must be selected and from these only must the race be cultivated. Their power of reproduction can be expressed only through the bodies of women. Thus women, and more especially mothers, are precious beyond all treasure. In honor and sanctity

none can approach them, for they are the makers of mankind. . . .

"How precious then is Woman—five times as precious as Man at the least. Only the finest men must have access to women; by selecting the finest we shall improve the race. Our duty is clear. Our nation must be restored to its ancient pride and power, that we may all have life and life more abundant. Carry out these sacred teachings and your ancestors will re-live still more gloriously; you yourselves will be endowed with eternal life; your descendants will honor you above all others. Ask not why this duty should be imposed upon you more heavily than upon previous generations: rejoice rather that you have been selected for the honor of race-renewal. . . .

"Are you going on or are you going back in the life-history of your race? Will you improve or will you deteriorate the inheritance that has come down to you as a sacred legacy: a trust from the Past: a trust to the Future? Do you wish to live nobly or to die ignobly? Do you desire everlasting life or everlasting death? In you reposes the power to open a new chapter in the history of your race—or to close that history for ever. In me reposes this Sacred Knowledge: mine is the knowledge that directs, but yours is the responsibility for the fulfilment of your duty to the Past, to the Present, and to the Future of Your Race."

E. R.

DIGITISCHA. Name given by the natives of Zanzibar to that form of sexual intercourse in which the woman takes a position above the man and gives to her organ a circular, grinding motion (moving her body about as if she were grinding corn), by way of increasing the male's pleasure. The accomplishment—for it is regarded as such—is said to be taught to girls by the old women of the tribe, the course of instruction lasting forty days. It is regarded as an insult to imply that a Zanzibar woman does not know how to do the *Digitischa* properly.

H. H. Ploss, *Das Weib in der Natur und Völkerkunde*, Leipzig, 1884, B. i, p. 217. Ploss is authority for the statement that this form of intercourse is likewise practised in the Dutch East Indies.

DREAM-SYNTHESIS, a method of dream-study, proposed by Havelock Ellis, in which there is no attempt at dream-analysis, but a statistical survey of the characteristics of the dreams.

Havelock Ellis (*Studies in the Psychology of Sex*, 1928, vii, 237-346): "The object has been to illustrate a method. This has been rendered possible by the gracious and highly intelligent assistance of a charming lady who has condescended for this occasion to become the *corpus vile* in which *experimentum fiat*. Therewith, it has, I hope, been made clear that, while the value of dream-analysis remains unquestioned, there are yet certain pitfalls into which when too narrowly followed it may sometimes lead, and that an important complementary guide to knowledge is furnished by the method of what I have termed dream-synthesis."

ECONOMIST. Term applied to a man who is comparatively impotent, and must therefore economize his sexual resources by considerable intervals between coitus.

EDUCATION [SEX EDUCATION IN AMERICAN SCHOOLS]. Before the turn of the century, vast numbers of books were sold for the enlightenment of boys and girls on the mysteries of sex and reproduction. These books were usually placed in the hands of the young persons in need of enlightenment by a kindly uncle or aunt, by the family physician or the minister, rarely by the parents themselves. And occasionally they were obtained surreptitiously from friends. The only contribution of the school to sex education was in the form of instruction in the art of reading.

With the rapid expansion of formal schooling for older children through the high school, and with the progressive increase in the amount of school time given to modern problems and subjects of instruction, especially to the natural and social sciences, it was inevitable that the taboos of an earlier period should be increasingly questioned by the teachers in the schools, just as they were being questioned by the young people

themselves. It may be, indeed, that young people with persistent questioning were in growing numbers becoming teachers, so that they gradually broke down the complacency and inertia of the educational institutions.

At any rate, the beginning of the century found interest in "sex education" increasing rapidly among teachers, especially in the high schools and normal schools. By 1905 there had been formed a society for the systematic promotion of "social hygiene" through educational channels. This was largely influenced by the medical leaders, social workers, and educators, who were concerned either with the dangers of the venereal diseases, or with the pathology of sexual maladjustment as manifested in prostitution and unhappy marriages, in masturbation and homosexuality.

The need was coming to be recognized from so many different directions that it has taken nearly three decades to reach a basis for unified purposes. Individual teachers on their own initiative, and often in opposition to parents and school authorities, had attempted from time to time to help classes under their direction, or individual boys and girls, to better understanding of the basic natural facts of sex and reproduction or to scare them with hellfire or venereal disease stories. Occasion was found or made in connection with health education, with biological science, or with home economics. Sometimes a teacher encouraged individual students to come for counsel or advice. In some schools specialists from the outside were invited to tell a whole assemblage of pupils whatever it was that the head of the school or the specialist considered important. Many of the speakers did this so impressively that it was a common thing for one to several boys to "pass out" after such a presentation.

With systematic efforts to consider the need and the approach to sex education came numerous conferences and extended discussions and studies as to the organization of essential materials and as to the development of suitable meth-

ods. By the time of the World War these gropings had reached the point of initiating special courses for prospective teachers in some of the normal or teacher training institutions. The content of this preparatory instruction was largely formal—the biology of sex and reproduction, secondary sexual difference, the doctrine of “clean living” (which, because of the historical antecedents, and because of the social composition of the teaching group, meant almost of necessity a celibate ideal of decency), and the dangers of venereal disease. It was not until well after the war that any considerable proportion of teachers had abandoned the doctrine that the venereal diseases were the normal penalties for improper sex practices.

After the United States joined the war the most urgent educational need appeared to be related to the prevention of military invalidity through venereal infections. The extensive propaganda for prophylactic measures was accompanied by more generalized education on biological, sociological, and psychological aspects of sex; and the impetus to the work served to stimulate the schools to further efforts.

In 1920, the United States Public Health Service and the United States Bureau of Education made a joint questionnaire study of the status of sex education in the high schools of the country (continental area) and found that some 40 per cent of the schools reporting were carrying on activities that might be properly designated as “sex education.” The character of the work was of course varied, since it was pretty generally agreed that there should be no special “courses” on sex in the curriculum.

There were recognized, however, two distinct approaches. In one, called “emergency” education, information or exhortation or inspiration was offered *ad hoc*, but aside from the “regular studies.” In the other, called “integrated” sex education, there was an effort to place the consideration of sex in its proper place as a part of the con-

text of the various subjects of instruction—biology, bacteriology, hygiene, social studies, literature, home economics, history, and so on. All the studies that have to do with life and with practical relationships among human beings are assumed to have some bearing upon sex, and to contribute something to a better understanding of sex problems, sex relations, sex control.

In the 1920 returns, 25.2% of the schools reported a program of “emergency” sex education, and 15.5% reported an “integrated” program. In the next seven or eight years, numerous training schools added materials and instruction to extend the teachers’ familiarity with the problems and to develop suitable techniques. In many schools teachers and administrators continued to experiment. Associations of science teachers, of health teachers, of home economics teachers, and other groups made more definite plans through committees, and elaborated programs and recommendations to the authorities. By 1927 it was possible to report a measurable advance.

A questionnaire issued in the latter year by the United States Public Health Service brought returns from over one-third of the senior high schools. In reply to substantially the same questions the principals reported “emergency” sex education in 16.0% of these schools and “integrated” sex education in 29.0%. This is an almost complete reversal of the previous ratios, as well as an increase in the proportion of schools giving any sex instruction at all from 40.7% to 45.0%. It is probable that the shift in form, which presumably represents an improvement in the philosophy and technique of education, is more significant than the 10 per cent spread in schools included.

An analysis of the returns on the basis of size of school supports the conclusion that progress is to a considerable degree an economic matter: that is to say, better work is possible where there are greater resources, where there are

better trained teachers, or where the organization permits teachers to improve through a degree of specialization. Where one teacher has to teach two to five "subjects," as is the case in schools of very small enrollment, there can be no excellent teaching in most of the subjects.

This is further supported by a consideration of the fields of interest that have furnished a basis for the study of "sex" in one or another phase. The subject with which sex education is most frequently "integrated" is biology (in over 30% of the schools); next in frequency come the social studies (over 14%), hygiene, physiology, psychology, physical education, home economics, and general science (3%). These variations depend in part upon the presence or absence of the various subjects in the curricula of the different schools, upon the presence of suitably equipped teachers, and upon the varying importance attached to the topics that enter into the educational purposes. The most frequently included topics are, as we should perhaps expect, reproduction, internal secretions, seminal emissions, menstruation, venereal diseases, eugenics and heredity, and social aspects of sex, parenthood, marriage, etc. Heredity is apparently taught more extensively than reproduction, and "social aspects" more often than menstruation.

School authorities as represented by high school principals declared themselves as favoring sex education, or at least as recognizing the need thereof, to the extent of 66%. Yet fewer than half of their high schools were doing anything at all. Even among the schools that were doing nothing, more than half the principals favored the introduction of suitable efforts. The discrepancy lies apparently in the lack of preparation on the part of the teachers and in the supposed hostility of the "public" or the parents. Both obstacles are of course subject to further educational reduction.

In scattered schools throughout the

country teachers of "nature study" in the elementary schools have introduced quite casually a vast amount of direct information regarding the life cycles and reproduction of various kinds of animals, from insects to mammals, with the result, where the question was followed up, that the boys and girls arrived at the high schools with a sober and matter-of-fact attitude toward sex in a gratifying proportion of the cases. At the other end of the school ladder the colleges have increasingly introduced instruction on the various phases of sex interest, and in various forms, from the isolated "smut talks" by a visiting "doctor" to systematic consideration of "preparation for parenthood," or "family life."

It is not difficult to make out a case for the need of sex education in the schools, especially if education is defined in sufficiently broad terms to include, beyond factual instruction, the guidance of attitudes and appreciations in terms of mental health and social adjustment of the individual. The lag within the teaching group is, however, so great that even if we condemn the ignorant obscurantism which would prevent further work in the schools, we must accept the gaps in the present school program as on the whole desirable.

Although pioneering will continue to be necessary here as in other fields (but especially here because of the traditional fears and negative attitudes regarding sex), it is probably fair to say first, that teachers will have the opportunity to deal with the intimate problems of childhood and youth as fast as they become equipped to do so understandingly and effectively; and second, that the outlooks and equipment of teachers are rapidly becoming adapted to such helpful guidance of young people, not as the result of special "courses," or instruction during their training, but as the result of a general elevation of the humane and cultural level of the teachers as persons, of the increase in proportion of married teachers, and of the

emergence of a more mature attitude toward life.

High Schools and Sex Education, A Manual of Suggestions on Education Related to Sex. Edited by Benjamin C. Gruenberg. U. S. Public Health Service, Washington, 1922 (description and analysis of various experiences among high school teachers who had attempted to keep "sex" in its place within the subject matter of various fields of instruction, with further practical suggestions).—*Sex Education, A Symposium for Educators.* U. S. Public Health Service, Washington, 1927 (a discussion by six specialists of various phases of the problems and practices; bibliography).—*Status of Sex Education in the Senior High Schools of the United States. A Survey . . .* by Lida J. Usilton of the U. S. P. H. S. and Newell W. Edson of the American Social Hygiene Association. U. S. Public Health Service, Washington, 1928 (V. D. Bulletin No. 87; results of a questionnaire study of practices, and of opinions among high school principals).—*Sex-Character Education in Public and High Schools.* Summary of papers read at Regional Conference on Social Hygiene, January, 1934. New York Tuberculosis and Health Association, New York, 1934 (papers by Willard W. Beatty, Benjamin C. Gruenberg, and Herbert W. Smith on recent trends and practices).

B. C. G.

EJACULATIO PRAECOX, or premature ejaculation, is probably the most frequent and also the most distressing form of sexual impotence. Formerly it was considered a neurasthenic condition and was described under the heading of irritable weakness. At present we recognize various forms and different causes of this ailment. Considering what disagreeable complications premature ejaculation entails, one must come to the conclusion that the belief, that the ejaculation itself is the essential part of the sexual act, is erroneous and selfish.

On the other hand, a number of the victims of premature ejaculation seem to attach no importance to this ailment and do not realize the tremendous influence it has in married life, and fail to understand their unpopularity with their respective sexual partners.

The main symptom of the disease is a marked contrast between desire and the erection necessary to the proper accomplishment of coitus. The erections

are either feeble or of very short duration, and the ejaculation takes place after a very few movements or even before real penetration. Such an unfortunate weakness may be a symptom of general neurasthenia, may be caused by an improper sexual life, prolonged abstinence, excessive masturbation, or frequent nocturnal emissions. It is often caused by pathological changes in the seminal vesicles, Henle's ampulla (the dilated extremity of the vas deferens), ejaculatory ducts and the colliculus seminalis (verumontanum). Frequently there is present a more or less pronounced hyperesthesia of parts or of the whole genital urinary tract. The study of the glands of internal secretion has shown that premature ejaculation is only too frequently caused by some dysfunction of the gonads or the pituitary and the so-called puberty gland itself.

Often we observe cases where temporary affliction with premature ejaculation is originated and maintained by the sexual partner. It may be the wife's fear of pregnancy, insistence on the use of the condom and deprecating remarks, a discouraging attitude explained by former experiences and disappointments.

The treatment of *ejaculatio praecox* is mostly long and tedious and must be dictated by the underlying causes and findings. General health conditions should be improved, anemia, nervous irritability, and blood pressure ought to be given due consideration, local pathologic changes must be treated "lege artis"; endocrine inadequacy may be favorably influenced by feeding or with injections of the proper organic preparations. Unfortunately a change of partners is sometimes imperative. Under all circumstances the patient must stop brooding over past mistakes, and must regain confidence.

V. G. V.

ELLIS, [HENRY] HAVELOCK (February 2, 1859). The noted writer upon sexology was born at Croydon, Surrey, of a family that shows on both

sides a long line of sea-faring folk and churchmen. His father was Edward Peppen Ellis; his mother, Susanna Mary Wheatley Ellis. Edward Peppen Ellis was a sea-captain, and Mrs. Ellis was the daughter of a sea-captain. She was also very devout, adhering to the Evangelical school of the English church, and wished to bring up her only boy as an equally devout Christian. Neither the elder Ellis nor his wife was possessed of deep intellectual instincts; their son's debt to them is, nevertheless, immense, since it was from their ideal character as man and wife that the boy first absorbed many of his wise and tolerant attitudes toward the manifold problems of man and woman. Intellectually, but intellectually only, Ellis is far more the child of his father's father and his mother's mother, neither of whom, incidentally, he ever knew.

There were four children to come after Ellis, and they were all girls. The position of only brother to four sisters may have had an influence upon his development. Of greater importance, however, must have been the voyage to Australia made at the age of six, in the ship *Empress*, of which his father was captain. From Australia they sailed to Peru. So that when Ellis returned to London and was entered as a day-boy in a school outside of London, he already had a vivid background of travel in far places and foreign lands. At this school he remained until the age of twelve, when he was registered as a weekly boarder in Mitcham, a few miles from the capital.

He was early interested in languages; in addition to French, which was part of his regular studies, he instructed himself in German and Italian. He had heard Spanish spoken on his South American visit, and was to retain for the rest of his life an intense interest in Hispanic culture. That he displayed, during these adolescent years, the characteristic stigmata of the type, we may take for granted. He began his attempts at self-expression with a juvenile effort entitled *The Precious Stones*

of the Bible; he indited verse; he felt the pangs of first love. There was no early initiation into sex, and for a long time the youth's treatment of the passion was to be of the remote, idealized variety, a trait that it has never quite lost.

At sixteen, Ellis went off to Australia once more, again under the captaincy of his father. He did private tutoring near Carcoar; he matriculated at Sydney University; but did not remain for graduation; he taught at Sparkes Creek. Chiefly, however, this second visit to the small continent is of interest because it is here that Ellis, during a prolonged period of self-examination, found himself. There is an important reference to this new birth in the chapter on The Art of Religion, in *The Dance of Life*. What Ellis experienced was really a "conversion" to unbelief,—to what might be called a rational mysticism. He explains it as no one else can:

A "conversion" is not, as is often assumed, a turning towards a belief. More strictly, it is a turning round, a revolution; it has no primary reference to any external object. . . . There is no necessary introduction of new ideas; there is much more likely to be a casting out of dead ideas which have clogged the vital process. The psychic organism—which in conventional religion is called the "soul"—had not been in harmony with itself; now it is revolving truly on its own axis, and in doing so simultaneously finds its true orbit in the cosmic system. In becoming one with itself it becomes one with the universe.

This is a central passage. At seventeen, Ellis had declared his independence; fundamentally, he remains the same today. The Australian period was further occupied with translations from the German, the Italian and the French. There is also an unpublished collection of *Notes*, set down late in 1878, which are significant as forecasting the *Impressions and Comments* that were to be started some thirty-six years later. They deal [I have been privileged to examine the entire manuscript, and to reprint copious excerpts] with personalities that attracted the youth at that time,—Swinburne, Goethe, Heine, Hosea, James Hinton; with problems of

good and evil; with science; with such vast abstractions as Life and Genius. They reveal already the cadences of a personal prose, as well as the fundamental trait of Ellis as a commentator upon the art of living: his grasp of the inner unity that makes of seeming opposites a vital whole. A number of the entries into this journal Ellis himself has underscored: *Life is the effort of Nature to attain self-consciousness . . . The man who has the greatest capacity for being better than other man is the man who has the greatest capacity for being worse than other men.* In these *Notes*, James Hinton appears as one of the most fruitful influences of Ellis's early life. From, or rather through, Hinton, he seems to have arrived at the conception of science as the agency rather than the enemy of any valid religiousness. The very last entry is almost a program of Ellis's mature career: "The world is full of apparent contradictions, and every highest truth is the union of opposites."

It was in Australia that Ellis's thoughts first turned to the study of medicine, and it is significant that the notion should have come to him from a reading of Ellice Hopkins's *Life and Letters of James Hinton*. The resolve to dedicate himself to the elucidation of sexual problems had already been made; no thought of medical training as a necessary preliminary had occurred to Ellis until he came upon the passage telling of Hinton's resolution to become a physician.

In 1881, then, Ellis enrolls in St. Thomas's Hospital, London. He also becomes immersed in the socialistic reform movements that are soon to agitate England. The Progressive Association, to which Ellis attached himself, serving on the executive committee, and for some time as secretary, was followed by The Fellowship of the New Life, which was to grow into the famous Fabian Society. It is characteristic that Ellis, when the decisive split in the Fellowship occurred, should have withdrawn with the minority, which had held out

for "the subordination of material things to spiritual." The majority formed the eventual Fabian Society on January 4, 1884; the Fellowship continued for fifteen years. It was in the original fellowship that Ellis first met the remarkable woman who was to become, in 1891, his wife,—that ebullient nature, Edith M. O. Lees, who died in 1916. Ellis, some time in 1884, made the acquaintance of Olive Schreiner. This developed into a friendship of more than ordinary significance, which we must appreciate chiefly in the letters of the woman. Thus early, she was twitting her friend upon a reticence that has remained with him throughout his life.

Ellis's medical studies, then, were varied by ardent sociological interests and by intense literary preoccupations. These flowered, while he was still a medical student, into two series of publications that are still widely known. It is significant that one of the series should be devoted to the Elizabethan dramatists (*Mermaid Series*) and the other to *Contemporary Science*. These were both devised and inaugurated by Ellis, their editor.

In 1889 he passed the Licentiate of the Society of Apothecaries, which has the right to grant medical qualification. He therefore left St. Thomas as a full-fledged physician. Perhaps in celebration of the event, he went upon a visit of some months to Paris—his third and longest journey to the French capital—in company of his sister, Louie, and Arthur Symons. Ellis visited hospitals and clinics; sat before Charcot and others; also, and perhaps more importantly, he mingled constantly with the French men of letters, making a devoted friend and admirer of Remy de Gourmont.

The marriage of Edith Lees and Havelock Ellis repeated, in its more intellectual plane, the happiness of Ellis's own parents. It was one of the earliest of the "new" marriages, in which husband and wife did not always live together in the same house, and in which the only vow taken was that not to de-

ceive one another. Mrs. Ellis has described it in her *New Horizon in Love and Life*, in the chapter on Semi-Detached Marriage. For the rest, it is worth noting that Edith Lees was in many respects the opposite, in temperament, to her husband. She was enthusiastic; she had a gift for practical pursuits, such as raising poultry, running a dairy, breeding stock, renting cottages, lecturing; she was less stable, mentally, than her husband, and even when she seemed most to resemble him, as in the matter of her literary expression, she most pointed the essential contrast. To her, writing was a phase of action. She was, unlike Ellis, a social creature; she must have served as a buffer between him and the more superfluous and de-vitalizing social contacts. She was touched, too, by a sentimentalism that could deery vivisection, and by a harmless species of psychism. Her feminism saw beyond such externalities as votes for women into deeper essentials. She was one of the most brilliant women of her generation, who never achieved the inner peace that had come so early to Ellis; she remained until she died the eternal seeker.

From the time of his marriage, Ellis's life takes on a placidity that remains unruffled through the convulsions that shake the world or that come to perturb, outwardly, his days. Contemplation, too, as Ellis insists, is a form of action, and few men of his time have remained so close to the deep sources of life as has this recluse. When, in 1898, his studies in sex were attacked on the score of alleged immorality, he decided to issue the rest of the volumes outside of England. His life, since the appearance of *The New Spirit* and *The Criminal*, in 1890 (notice, again, how the literary and the scientific, with Ellis, march always hand in hand), has gone chiefly into his writings. It has not departed radically from the principles that actuated him at the time of his Australian "conversion."

The writings of Ellis form, in themselves, a miniature library. The origi-

nal works comprise *The New Spirit*, 1890; *The Criminal*, 1890; *The Nationalization of Health*, 1892; *Das Konträre Geschlechtsgefühl*, with J. A. Symonds, issued in German, Leipzig, 1896; *Studies in the Psychology of Sex*, seven volumes thus far, now published in the United States, and issued between 1897 and 1928; *Affirmations*, 1898; *The Nineteenth Century: A Dialogue in Utopia*, 1900; *A Study of British Genius*, 1904; *The Soul of Spain*, 1908; *The World of Dreams*, 1911; *The Task of Social Hygiene*, 1912; *Impressions and Comments*, three series, issued between 1914 and 1923, and now to be had in a single volume entitled *The Fountain of Life; Essays in War Time*, 1919; *The Philosophy of Conflict*, 1919; *Little Essays of Love and Virtue*, 1922; *Kanga Creek*, 1922; *The Dance of Life*, 1923; *Sonnets with Folk Songs from the Spanish*, 1925; *My Confessional*, 1934.

In addition to these original writings there are numerous translations, edited writings, prefaces and introductions, which will be found listed in the bibliographies of the books referred to at the end of this article.

The fame of Ellis as an investigator into the normalities and the abnormalities of sex has tended to make readers overlook his importance as an essayist,—as a stylist in English. The unpretentious ease of his literary style has helped toward this oversight. Ellis, in his writings as in his life, has not striven for effect. He attains, in many a passage, a quiet beauty comparable to the beauty of the tolerance, the patient research, the broad humaneness, the rounded wisdom, that distinguish his psychological studies. Without haste, without rest, without violence, he became one of the most potent liberators of the twentieth-century spirit from prudery, narrowness of vision, bigotry, smugness. His life and his writings breathe alike the fragrance of sanity. A latter-day sage, he has helped mankind toward self-understanding,—toward an independence of principle that frees one even from one's leaders. For

Ellis insists that "To live remains an art which everyone must learn, and which no one can teach."

Isaac Goldberg, *Havelock Ellis, A Biographical and Critical Survey*, 1926 (contains a chapter on The Writings of Mrs. Havelock Ellis); Houston Peterson, *Havelock Ellis, Philosopher of Love*, 1930.

I. G.

ELMIRA REFORMATORY, SEX

IN. Very little has been written about sex in correctional institutions, although some discussion has been carried out from time to time in hushed voices. When prison workers get together in private council they sooner or later get around to the discussion of the sex situation that is found in all penal institutions. Psychiatrists in recent years have been focusing their attention on the importance of the sex drive and conflict over matters of sex as an etiological factor in misbehavior, and although our prisons offer an unexcelled opportunity for the study of this intricate problem, even the psychiatrists working in these institutions have been so tied up with red tape that they have been unable properly to investigate this problem, and in no case have they been allowed fully to discuss the few facts that they have been able to glean from their intimate examinations of the individual prisoners.

Elmira Reformatory was the first institution of its kind to be established, and has always been looked to for scientific advancement. Prisoners were first received at the Reformatory in 1876, and ever since its inception the Reformatory has been considered an institution for the reformation of delinquent young men above sixteen years of age.

a scientific outlook in his direction of this pioneer institution, although he has been frequently checkmated by public opinion and has never seen fit to place on paper his unprecedented experience of over thirty years.

The writer was appointed Psychiatrist and Director of Classification at Elmira Reformatory in 1931, and was given the fullest cooperation possible by Dr. Christian. Realizing the importance of sex as an etiological factor in criminal behavior, plans were laid to follow a strictly scientific procedure in the study of the individual delinquent, and to follow a program of re-education in this particular. The superintendent was fully aware of these plans and endorsed the procedure. Shortly after beginning my duties at the Reformatory, I applied an emotional test to 1000 inmates. In a list of about 200 questions given in the test about twenty of them had some sexual significance. While they could not be considered objectionable, a great storm of protest was aroused, and although the test was given as planned one Sunday evening after the inmates had been locked in their cells, the superintendent found it necessary to withdraw his approval for the continued use of the test.

It so happened that the Catholic chaplain in his morning service before the inmates maligned the psychiatrist and stated that such a test was an insult that demanded public apology. Although the test was handed to 1000 inmates only 300 cooperated in the test, and resting on the protection of the Church, many inmates took the opportunity to malign the psychiatrist, although they were assured that the test was entirely an impersonal matter and that it was entirely voluntary.

The Reformatory for a good many years has had an inmate newspaper published each week, and soon after beginning duty at the Reformatory the psychiatrist was asked by the inmates to conduct a health column for their benefit. This column attempted to discuss important health problems, among them, sex and sex hygiene, but on the appearance of the first article discussing venereal infection a protest again arose from the ultra-prudish underlings and the superintendent was compelled to request that this column in the future should discuss nothing concerning sex, and that the inmate should be considered as an individual with "nothing below the belt."

It is evident from these two experiences that no open scientific procedure could be followed in the examination of the prisoners, but during the course

^a
The writer was appointed psychiatrist and superintendent in 1900, and although the Reformatory was under the superintendency of two laymen between 1906 and 1917 the assistant superintendent during this period was a physician, and in 1917 became the superintendent. This man, Frank L. Christian, has steadfastly held

of three years about 4000 prisoners were examined and much material of importance to sexology was gleaned.

Ninety-one per cent of the inmates were single men, and more than half of these single men had indulged in sex relations before confinement in the Reformatory, although the average age was about 19 years. Over 20% had the experience of sex intercourse before they were 15 years of age, and a number of the men had had sex relations as young as 10. At least 40% of the total admissions had indulged in a non-heterosexual type of sex relationship previous to admission, and well over 90% frankly admitted having indulged in masturbation to excess some time during their lives. Relatively few obvious homosexuals are admitted to the Reformatory. These cases are frequently seen in State's Prison and in the various lockups, but out of the 4000 prisoners above noted not more than 20 prisoners were frankly homosexuals, and would undoubtedly find means of continuing to gratify themselves in a non-heterosexual manner.

In spite of the fact that passive homosexuals are seldom seen amongst the first admissions in the Reformatory, there is every evidence to point to the fact that inmates are not infrequently initiated into these practices and before finishing their terms in the Reformatory, which is on the average 16 months, they become well acquainted with the various means of gratifying themselves homosexually. It is unfortunate that most of our prisons and certainly all of our reformatories are overcrowded, and the Elmira Reformatory is particularly so, as for some years practically all the inmates have had to be shut two in a cell. Dormitories might have been used to advantage and with less hazard to the sexual stability of the prisoners, but these were discontinued because of the lack of guard supervision. In spite of the fact that the two-man cell is conducive to homosexual indulgence, very

little care was taken in selecting partners, and usually it was a matter of blind selection. In talking with various night guards, it became evident that relatively few of the cases found indulging in homosexual practices were reported, yet the investigation of about 2500 offenses committed by inmates against the institutional rules during the course of two years, 27% of these reports were for sexual offenses, although only slightly over 1% were actually reported as such, being given the name of licentiousness.

It is interesting to note that over the course of 30 years much progress has been made in the handling of the problem of sex in the Reformatory, and while the situation is still rather archaic, a retrospect shows definite advancement. Masturbation, which is indulged in by every inmate in the Reformatory, used to be considered a major offense, and up until about ten years ago was not only punishable by loss of time, but also the inmate was made an object lesson before the other inmates by being handcuffed to his cell door or to a railing just outside the entrance to the dining room.

It is also stated that more serious sex offenses were punishable by complete loss of time and strict solitary confinement. At present masturbation is not considered an offense against the rules of the institution, but sodomy, either passive or active, and fellatio calls for the inmate losing all the time he has made in the institution and solitary confinement for at least a month, but does not call for referral to the psychiatrist nor any form of psychotherapy.

The general atmosphere of the Reformatory is one of homosexuality, as inmates are not allowed to correspond with girl friends even if engaged, and before they are allowed either to write or receive letters from a wife or female members of their immediate families they must produce official evidence of this personal relationship. They are not allowed to have pictures

or photographs in their cells except of the immediate family, and the drawing or hanging of suggestive pictures in the cells, which is no doubt a health stimulus to adolescent youth, calls for serious punishment at the Reformatory. In fact, no women are allowed within the institution except on visiting days, and the inmates are never allowed to speak to women during their entire incarceration, except when the immediate family may call once a month. The inmate is not even allowed to tell a suggestive sex story without being subject to punishment, and the attitude of the guards and officials of the institution is one to deprive these adolescent and young adults of the most fundamental drive in their personalities.

J. L. Mc.

EMBRYOLOGY OF THE GENERATIVE ORGANS.

1. THE INDIFFERENT STAGE OF THE GONADS AND DUCTS.
2. THE DEVELOPMENT OF THE TESTIS.
3. THE DEVELOPMENT OF THE OVARY.
4. DEVELOPMENT OF THE UTERUS AND VAGINA.
5. THE EXTERNAL GENITALIA.
6. MORPHOGENESIS OF THE MALE EXTERNAL GENITALIA.
7. ACCESSORY GENITAL GLANDS IN THE MALE.
8. MORPHOGENESIS OF FEMALE EXTERNAL GENITALIA.
9. DERIVATIVES OF FETAL REPRODUCTIVE SYSTEM.
10. DESCENT OF THE TESTES.
11. DESCENT OF THE OVARIES.
12. BIBLIOGRAPHY.

The reproductive system comprises a pair of internal organs with their ducts and associated glands and an external copulatory organ. This group of essential sex organs develops from an initial indifferent condition into the definitive structures appropriate for each sex. The primary morphology is accordingly potentially bisexual. Development involves a process of progressive dominance of one of the differential structural possibilities over its sexual alternate. The initial representatives of the alternate sexual system persist in part in

the adult of either sex as vestigial structures. In this very early structurally bisexual mechanism differential unisexual function is inherent by reason of the presence in the otherwise indifferent gonad of primordial germ cells with either the male or female complex of chromosomes.

The chromosome number for each sex is forty-eight, but in the female the group includes two of the X type or sex chromosomes while in the male the group includes one X and one Y chromosome (Painter, '23; Evans and Swezy, '29). The alternate type of later development of the reproductive system is presumably the result primarily of the presence of primordial germ cells with the respective male or female chromosome group, supported secondarily by appropriate hormones (Jordan, '12; Danforth, '32). There is considerable evidence, however, that this initial sex bias may be subsequently overridden by differential environmental conditions, especially nutritional and hormonal (Jordan, '22; Witschi, '32).

Since testis and ovary arise from the same primordium in which develop the embryonic transitory renal systems, the pronephros and the mesonephros, and since the initial nephric ducts are in part appropriated by the differentiating sex glands, the description of the development of the gonads involves also brief reference to the development and structure of the transitory embryonic kidneys. Likewise, since the external sexual organs develop in part from the embryonic cloaca, reference must be made also to the other derivatives, the bladder and rectum. Accordingly, the description of the embryology of the generative system begins properly with the discussion of the sexually indifferent stage of the internal organs.

The Indifferent Stage of the Gonads and Ducts

Pronephros. The pronephros or "head kidney" is a very transitory and variable structure in man. It consists of a serial collection of from seven to ten tubules attached at their dorsal terminal to a longitudinal duct (fig. 1). The first tubules appear in embryos with a length of 1.75 mm. (twenty-three

days), at the levels from the sixth to the eighth somites; these begin to degenerate while the later tubules appear. By the 2.5 mm. stage of development (twenty-six days) the full quota of from seven to fourteen pronephric tubules has formed. The tubules are arranged in segmental sequence, their location corresponding to that of the adjacent

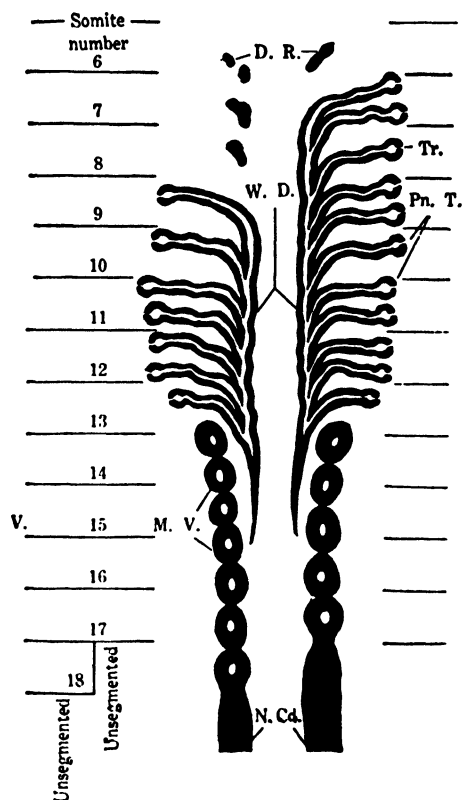


Fig. 1. Diagram of pronephros and developing mesonephros of a 3.55 mm. human embryo (Watt, '15). Pn. T., pronephric tubules; D. R., degenerating tubules; Tr., nephrostome; W. D., Wolffian ducts; M. V., mesonephric vesicles; N. Cd., nephrogenic cord.

somites. Disappearance proceeds in a craniocaudal direction and by the middle of the fifth week (5 mm. stage) all the tubules have degenerated (Watt, '15). Except for the pair of longitudinal (Wolffian) ducts the pronephroi are without functional significance in man.

The pronephric or Wolffian duct de-

velops in the following manner: From the dorsal border of the segmental bridge of mesoderm (nephrotome) between the paramedial somites and the lateral plates which enclose the celom, there proliferates a cord of cells. Each pronephric cord grows dorso-laterally and meanwhile acquires a lumen. The resulting pronephric tubules turn caudad at their distal ends and anastomose with similar growths from successive tubules to form a longitudinal canal, the Wolffian duct. Only this duct enters into the formation of the succeeding renal organ, the mesonephros, and contributes to the definitive genital system. By the 5 mm. stage the Wolffian duct has reached the lateral wall of the cloaca at the base of the tail but the caudal half is still in the condition of a solid cord. By the 7 mm. stage a continuous lumen has appeared and it now begins to serve as an excretory duct for the tubules of the fetal kidney, the mesonephros.

Mesonephros. The mesonephros, Wolffian body or "middle kidney" becomes involved in the development of the genital organs to a considerable extent. It comprises a large collection of secretory tubules which develop in a non-segmental mesodermal bridge in linear sequence with the segmental nephrotomes of the pronephros (fig. 1). This bridge or "intermediate cell mass" constitutes the nephrogenic cord. The first primordia of the mesonephric tubules are spheric groups of cells proliferated from the dorsal surface of the nephrogenic cord at the level of segments thirteen to fifteen. These tubule primordia are present in embryos with a length of 2.5 mm. They hollow out to form vesicles from the lateral surface of each of which grows a solid cord of cells to make connection with the adjacent Wolffian duct.

Presently a lumen appears in the connecting stalk and the vesicle becomes converted into a tubule which subsequently grows greatly in length and becomes characteristically coiled. The medial terminal expands into a thin-

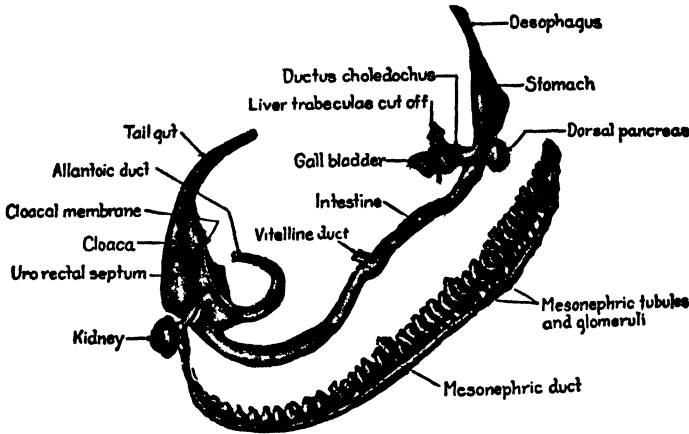


FIG. 2. Reconstruction model of mesonephros, cloaca and digestive tube of a 5.5 mm. human embryo (Shikunami, '26).

walled chamber and then is invaginated by a tuft of capillaries (glomerulus) from a branch of the aorta and converted into Bowman's capsule of the resulting mesonephric corpuscle. New tubules are added both cranially and caudally. The cranial limit is reached in embryos of 5 mm. At this stage mesonephric tubules occur as far forward as the eighth somite, thus overlapping the region of degenerating pronephric tubules, and as far caudad as the twenty-fifth somite (fig. 2). The caudal limit, at the definitive fourth sacral segment, is attained toward the end of the second month at the 23 mm. stage (Shikunami, '26).

The mesonephros reaches its maximum bulk in man about the middle of the second month (13 mm.); each gland contains about thirty tubules (figs. 3

and 4). However, from the beginning of the sixth week progressive degeneration of cranial tubules and successive additions of caudal tubules effects a recession of the nephric gland as a whole. Ultimately the cranial three-fourths of

the mesonephros degenerates, persisting only as a gonadal ligament, which will be described below. The total number of tubules formed in each mesonephros is approximately eighty-three, of which approximately thirty-three remain in the ninth week; in the tenth week only about twenty remain functional, and by the end of the fourth month all have degenerated except the

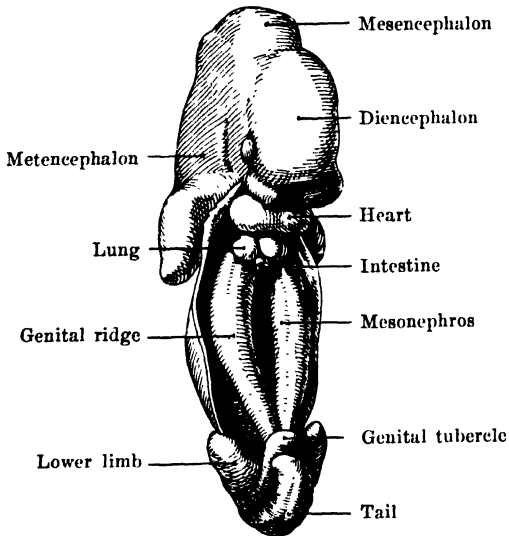


FIG. 3. Human embryo of 9 mm. (Kollmann, '07), with ventral body wall removed to show the mesonephros and genital ridges.

few appropriated by the gonads (figs. 6 and 9). Henceforth renal function is mediated solely by the definitive kidney, the metanephros. In the human embryo of the fifth week pronephros, mesone-

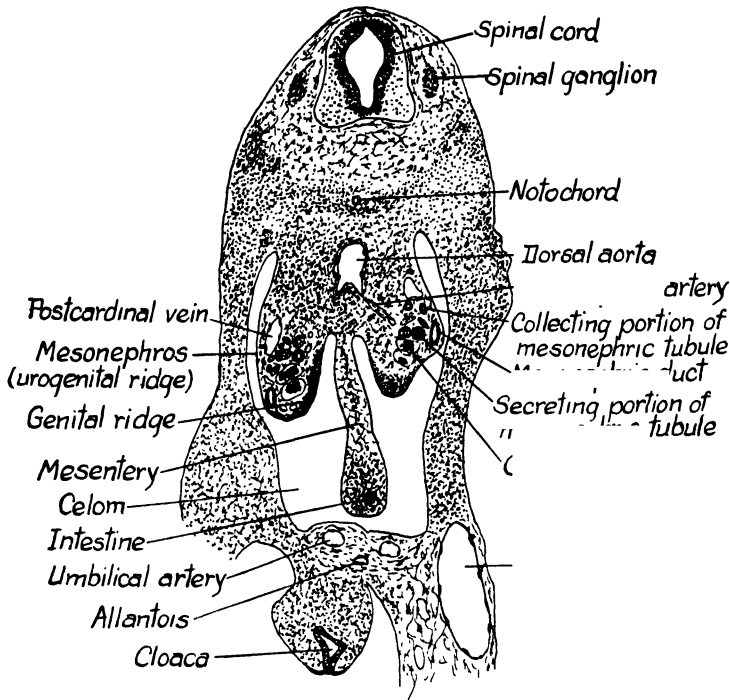


FIG. 4. Transverse section of a human embryo of 13 mm. at the level of the mesonephroi.

phros and metanephros are all represented. The pronephros is the functional kidney of amphioxus and lamprey; in fishes and amphibians the mesonephros is the definitive renal organ.

In consequence of the extensive growth of the tubules the mesonephros projects from the roof of the celom as a prominent rounded ridge on either side of the dorsal mesentery. Already at the beginning of the second month (8 mm.) it is evident, and as the so-called urogenital fold it extends from the region of the future diaphragm to the level of the cloaca (fig. 3). In this caudal region the two folds fuse medially to form the mesodermal bridge known as the genital cord. This structure becomes of especial importance in the female in connection with the development of the uterus and the broad ligament.

Genital Ridge. At the beginning of the second month (7 to 9 mm.) the

simple peritoneal epithelium of the urogenital fold becomes many-layered over the ventro-medial border, and this proliferative activity produces a ridge which extends the length of the fold (figs. 3 and 4). This ridge is termed the genital ridge or fold and is the primordium of the future gonad. By the 13 mm. stage (forty-five days) the genital fold has become differentiated into a superficial germinal epithelium and an inner epithelial mass. The genital ridge becomes progressively more sharply delimited from the mesonephric fold by the appearance of deep lateral and medial grooves, until only a membranous connection remains between gonad and mesonephros, constituting the mesorchium of the male and the mesovarium of the female. The condition attained at the 13 mm. stage terminates the indifferent stage. Henceforth the gonads of the prospective male pass through developmental stages very dif-

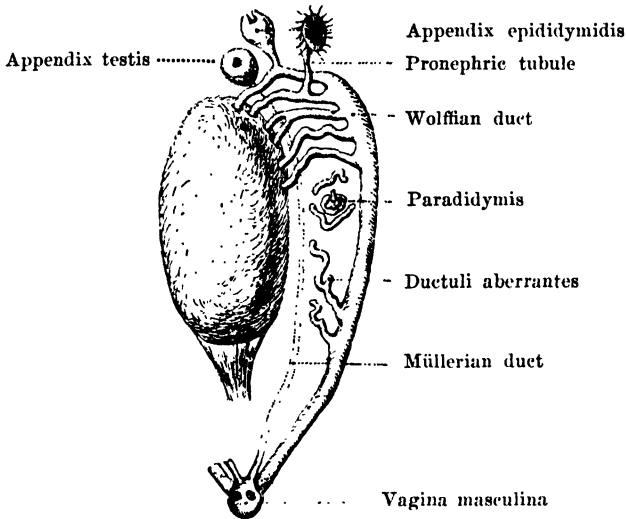


FIG. 6. Diagram of male genital system showing testis and persistent portions of the mesonephros and the Müllerian duct. (From Kollmann's *Handatlas der Entwicklungsgeschichte des Menschen*, 1907.)

ferent from those of the gonads in the prospective female; and developing testis and ovary appropriate in very different ways the several constituents of the associated mesonephros in the attainment of the definitive conditions.

Before proceeding to the description of the later embryology of the testis and ovary, attention must be directed to a second pair of longitudinal canals, the Müllerian ducts. They are of fundamental importance in the female, where they contribute the uterine tubes, uterus and vagina (fig. 9). Only rudiments persist in the adult male (fig. 6). Each Müllerian duct arises as a funelliform invagination of peritoneum at the cranio-lateral border of the urogenital fold. The primordium appears at the 10 mm. stage at the level of the third thoracic segment. The Müllerian ducts grow caudad parallel to the pair of Wolffian ducts. The growing tip is at first solid but soon acquires a lumen. From a position lateral to the Wolffian ducts at the cranial end of the unrogenital fold the Müllerian ducts pass ventrad in the mid-region and then near the caudal end they cross over the Wolff-

ian ducts to a terminal medial position in the genital cord (fig. 11). The indifferent phase, ending at about the 13 mm. stage, is, therefore, characterized by a potentially bisexual primordium, consisting of a pair of gonads and two parallel pairs of associated canals, a pair of Wolffian ducts and a pair of Müllerian ducts. These structures supply the morphologic basis from which the definitive internal genital system develops.

The Development of the Testis

The gonads towards the end of the sixth week consist of an inner epithelial mass and an enveloping peritoneal epithelium. The initial morphologic indication of male differentiation, other than the presence of male primordial germ cells ("primary gonocytes"), is the sudden appearance during the seventh week of radiating cords of cells, the testis (sex) cords (fig. 5). The looser intervening tissue constitutes the intermediate cords. The mesenchymal tissue lying between the peripheral ends of the testis cords and the peritoneum condenses into a relatively compact tunica albuginea, continuous with the interme-

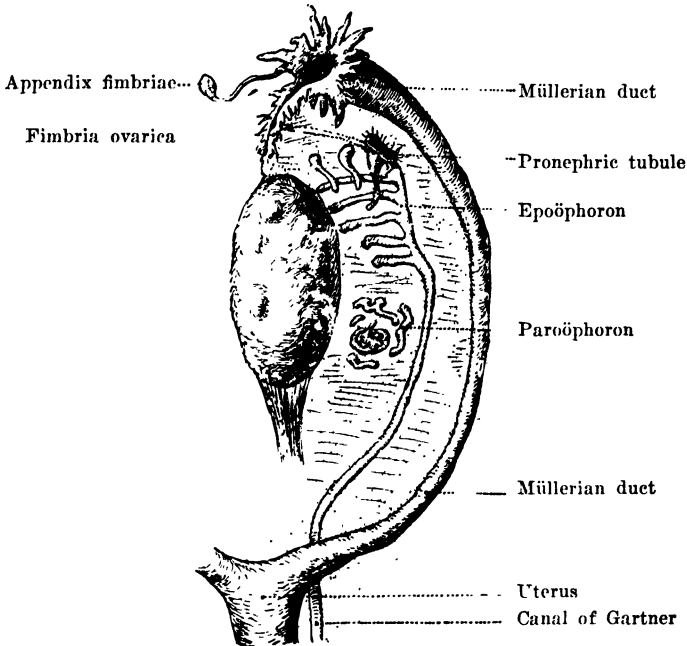


FIG. 9. Diagram of female genital system, showing ovary and persistent portions of Müllerian ducts and mesonephros. (Kollmann.)

diate cords. Both testis cords and intermediate cords are composed of two kinds of cells, smaller *indifferent cells* and larger *genitaloid cells*, the latter including the primordial germ cells (Stieve, '27).

The peritoneum becomes the so-called germinal epithelium. Meanwhile the mesoderm at the cranio-lateral pole of the testis condenses to form the mediastinum, continuous with the mesorchium. Here the proximal ends of the testis cords anastomose freely to form the rete cords. During the seventh month lumens appear in the peripheral ends of the testis cords and, extending proximally, communicate with lumens in the rete cords. Thus are established the seminiferous tubules and the rete testis. The short junctional segments become the tubuli recti. The distal portions of the seminiferous tubules become extensively coiled, hence their designation tubuli contorti. In lower mammals, for example the pig (Allen, '04) and the cat (Sainmont, '05), the testis cords derive from columns of cells proliferated

from the peritoneal (germinal) epithelium. A similar origin is claimed also in the case of man (Bremer, '11, '27; Simpkins, '28).

Concomitant with the development of the testis cords into tubules the intermediate cords have become more slender and compact to form the septulae testis, their outer layers meanwhile condensing into sheaths for the tubuli contorti. Certain groups of the intertubular cells, presumably genitaloid cells, become differentiated into relatively large polyhedral elements, the interstitial cells of Leydig. The cells are characterized by a large content of mitochondria, a crystalloid and fatty bodies (Winiwarter, '04). These cells constitute an endocrine portion of the testis, possibly elaborating the male sex hormone and controlling the normal development of the male secondary characters (Steinach, '08).

With these developmental steps in the testis certain changes in the adjacent mesonephros have kept pace. A cranial group of mesonephric tubules has atro-

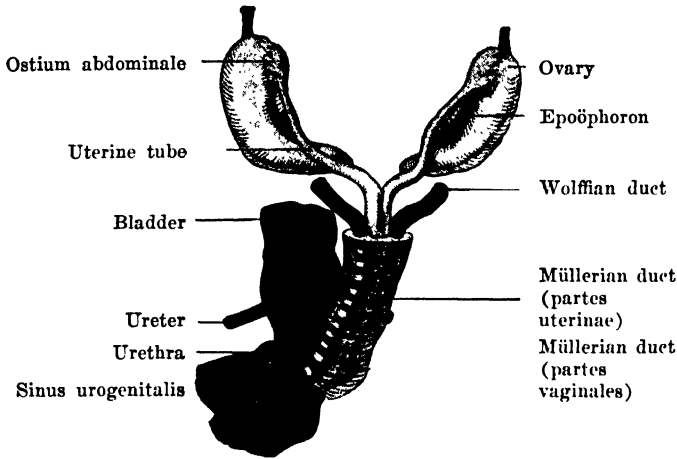


FIG. 11. Reconstruction of the female genital system of a 29 mm. human fetus, showing the utero-vaginal primordium (fused Müllerian ducts) in the genital cord. (Kollmann.)

phied, the involved portion of the mesonephric fold now constituting a mesonephric ligament. This is continuous with a small atrophic polar region of the gonad and the two become the transitory diaphragmatic ligament. The cranial portion of the Wolffian duct corresponding to these atrophic tubules becomes the stalked hydatid (appendix

vasculosi, the mass constituting the lobuli epididymidis of the caput or globus major (fig. 6). Several, usually two, mesonephric tubules caudal to the appropriated junctional group remain connected with the Wolffian duct but end blindly as the ductuli abberentes. In series with these a number of mesonephric tubules suffer more or less complete atrophy, persistent blind remnants contributing the paradidymis (organ of Giralde).

The Wolffian duct of the later mesonephros becomes greatly coiled cranially to form the ductus (corpus) epididymidis; the caudal portion remains straight and differentiates into the ductus (vas) deferens and the terminal ejaculatory duct; the intermediate portion becomes the cauda epididymidis (globus minor). A dilatation appears in the wall of the ductus deferens adjacent to its urethral termination, which is recognized as the ampulla. The glandular seminal vesicle of each side develops from an evagination on the dorsal wall of the ampulla (fig. 12) and appears at about the thirteenth week (80 mm. stage; Watson, '18). The remainder of the male genital tract is formed from the unpaired urethral primordium and the urogenital sinus. Its

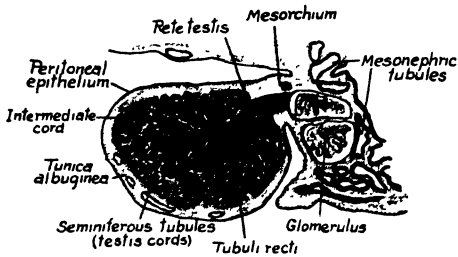


FIG. 5. Transverse section of testis of a pig fetus (62 mm.). (From Jordan and Kindred's Textbook of Embryology, after Bonnet.)

epididymidis). A group of from eight to twelve mesonephric tubules immediately caudal to the cranial atrophic group grow through the rete tubules of the testis during the fourth month.

Luminal continuity is established toward the end of the sixth month. These persistent mesonephric tubules become the ductuli efferentes and con-

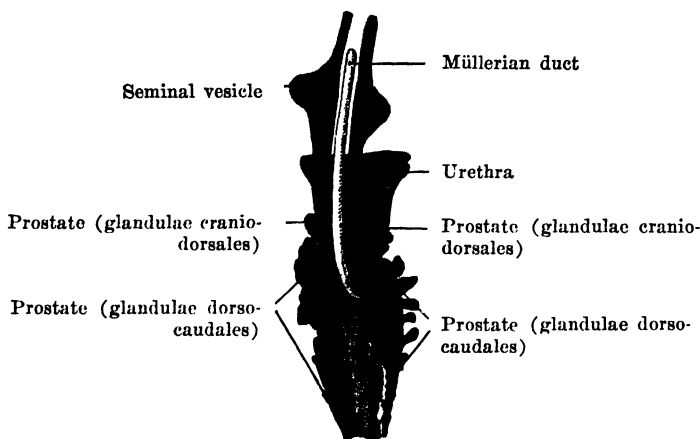


FIG. 12. Reconstruction of portion of the male genital duct system and prostate gland of a 60 mm. human fetus; showing origin of seminal vesicles as dilatations on the lower ends of the Wolffian ducts, and the origin of the vagina masculina from the persistent lower fused ends of the Müllerian ducts. (Kollmann.)

development will be described below in connection with the cloaca and the penis. The original mesorchium is represented in the adult by a membranous bridge between testis and epididymis.

Within the tubuli contorti two types of cells can be early identified, indifferent cells and genital cells. The genital cells have developed from the genitaloid cells of the testis cords. The exact relation between these secondary germ cells and the primordial germ cells which migrated into the gonad from the gut wall via the mesentery is not fully understood. Certain authorities claim that the primordial germ cells persist and proliferate to produce the secondary germ cells (Allen, '04, Felix, '12, Fuss, '13); others believe that the primordial germ cells have only phylogenetic significance and early disappear (Firket, '20) while some claim that both indifferent cells and germ cells derive from the same primordial stem cell.

According to Simpkins ('28) the genitaloid cells, contrary to their fate in the ovary where they produce precocious follicles in the full term ovary, degenerate within the seminiferous tubules; the definitive spermatogenic cells are said to arise from the smaller cells, "transformed somatic cells." Whatever the

origin and genetic relationship of the secondary germ cells, certain smaller "indifferent" cells elongate to become sustentacular cells for the support of developing germ cells. The sustentacular cells or Sertoli cells appear to contribute some nourishment to the attached developing germ cells, hence appropriately designated also "trophocytes." The genital cells (secondary gonocytes) multiply very rapidly and with concomitant differentiation at the time of puberty produce the several generations in the development of the sperms; in sequential order spermatogonia, primary spermatocytes, secondary spermatocytes, spermatids, spermatozoa (sperms).

Polyorchidism may occur as a very rare anomaly; thirteen histologically proved cases are on record (Jordan and Dodson, '34). These are all cases of triorchidism. Earlier accounts of cases of four or five separate testicles lack adequate histologic evidence. The testicular duplication is generally sinistral; only three cases have been reported where the supernumerary testis occurs on the right side. The cause of gonadal duplication is not known, though the suggestion of early transverse constriction of the genital ridge by peritonitic bands (Broman, '11) may have per-

tinence in some cases. Similar ovarian conditions constitute the anomaly of polyoönism of which only nine true instances have been reported (Brady, '25). The supernumerary ovary also generally occurs on the left side.

The Development of the Ovary

In the prospective ovary differentiation begins about a week later and progresses at a slower pace than is the case with the testis. At the 25 mm. stage (beginning of third month) the ovary consists of an inner epithelial mass or nucleus composed of indifferent cells, genitaloid cells and genital cells, and a circumscribing peritoneal (germinal) epithelium (fig. 7). The epithelial nucleus enlarges and by the eleventh week projects into the region of the mesovarium as the primitive rete ovarii, homologue of the rete cords of the testis. There can now be distinguished in the ovary a denser cortex and a looser medullary portion. In both regions occurs a transformation of genital cells into primitive ova. The ovary at this stage contains neither epithelial

cords nor tunica albuginea, thus contrasting sharply with the testis in which these structures are already conspicuous. Early in the third month richly vascularized connective tissue from the mesovarium grows in to enclose the rete cords, forming the primordium of the mediastinum ovarii. From this primordium connective tissue strands grow into the substance of the epithelial nucleus to form the septulae ovarii. These septa anastomose peripherally to form during the sixth month a compact tunica albuginea immediately beneath the germinal epithelium.

Prior to the formation of the tunica albuginea, during the third to fifth months, the ovary grows in size as new cells are added from a zone of proliferation at the periphery of the primitive cortex (fig. 8). In consequence a new cortex is formed external to the primitive cortex, into which new cells may be proliferated from the peritoneal epithelium. Coincident with the origin of new ova in the cortex there occurs a degeneration of ova in the medulla. The resulting medullary spaces are filled

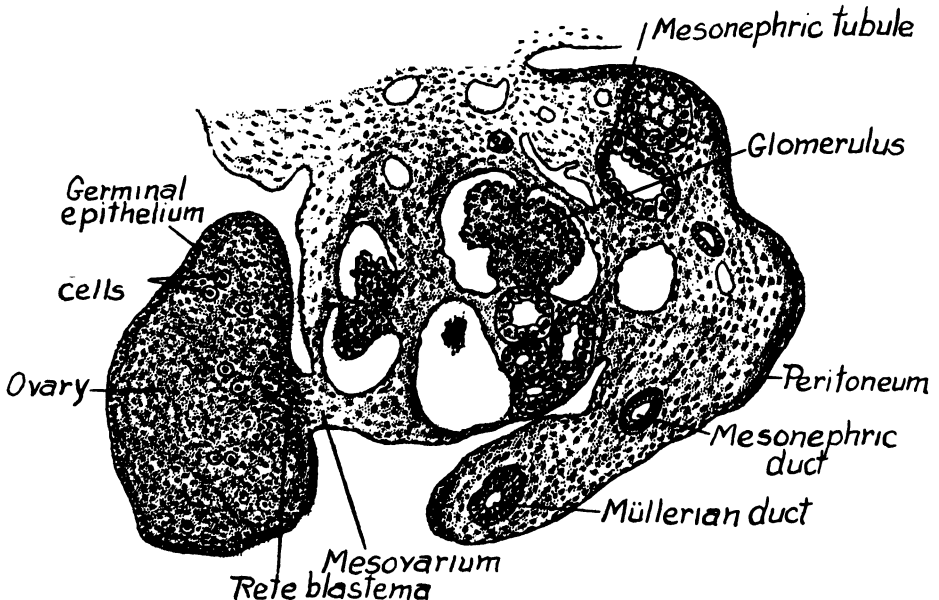


FIG. 7. Transverse section through left mesonephros and ovary of a 25 mm. human embryo. (From Jordan and Kindred, after Broman.)

with ingrowing connective tissue to form the ovarian stroma. Scattered medullary cords of indifferent cells may persist in the region of the rete ovarii until birth when they degenerate.

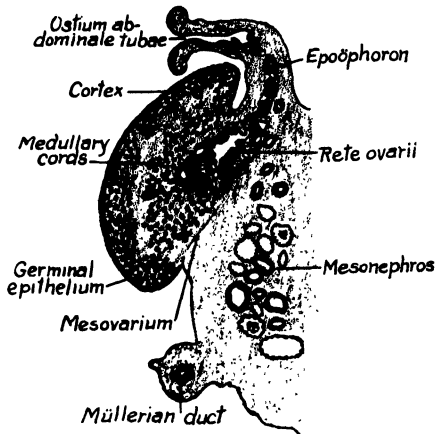


FIG. 8. Longitudinal section of the ovary and mesonephros of a cat fetus (94 mm.). (From Jordan and Kindred, after Coert, 1898.)

The rete cords and the later tubules make variable connections with a cranial group of mesonephric tubules to form the epoöphoron (parovarium; organ of Rosenmüller) of the broad ligament (fig. 9). An atrophic mesonephric tubule of the cranial group may persist as an appendix ovarii (hydatid of

Morgagni; vesicular appendix). The cranial end of the Wolffian duct persists as a hydatid (appendix fimbriae) on the mesosalpinx at the fimbriated end of the uterine tube. The caudal segment of the duct becomes the collecting duct of the epoöphoron (canal of Gartner); remnants of the duct may persist also in the wall of the uterus and vagina, occasionally in the hymen (Meyer, '09). A middle group of atrophic mesonephric tubules constitutes the vestigial paroöphoron, homologous with the paradidymis of the testis.

During the fifth month there appear in the expanding cortex groups of cells including a central genital cell or ovum and an enveloping layer of indifferent cells (fig. 10). Such groups constitute primordial follicles. In lower mammals formation of the ovarian follicles of the cortex is preceded by an invasion of columns of cells from the peritoneum (germinal epithelium). These so-called "Pflüger's columns" are supposed to contain one or several primordial germ cells temporarily included with the germinal epithelium. Each column is ultimately severed from the germinal epithelium through the formation of the tunica albuginea; subsequently it becomes broken up through connective tissue invasion into several spheroidal

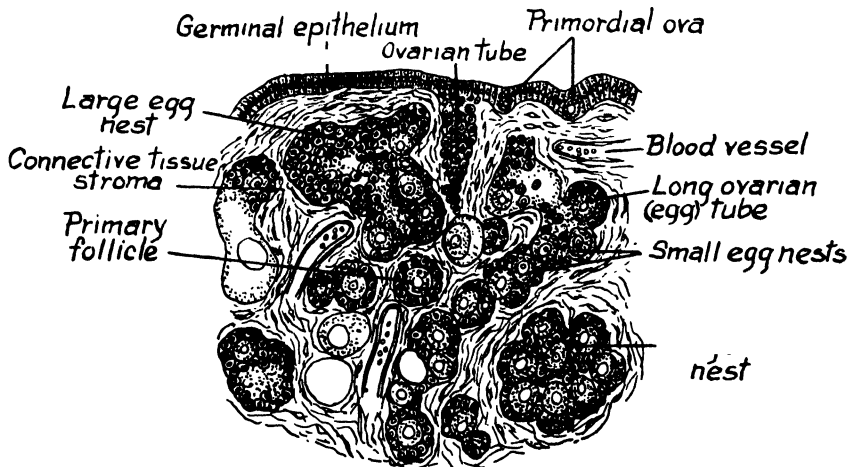


FIG. 10. Portion of vertical section of the ovary of a newly born child. (Redrawn from Waldeyer.)

groups of cells ("egg nests") each with a prospective ovum. In woman primary follicles form in the absence of definite Pflüger's columns. As the ovum grows, the enveloping indifferent cells proliferate and form a several-layered capsule for the egg, the group constituting a primary ovarian follicle. Toward the end of fetal life, and during the first and second year, a few primary follicles become converted into vesicular (Graafian) follicles, comparable to the functional vesicular follicles of the postpubertal ovary.

Vesiculation of the originally solid follicles is the result of a liquefaction of certain of the periovular indifferent cells and the consequent formation of an antrum which becomes filled with a liquor folliculi. This liquor is a source or reservoir of the female sex hormone, folliculin (theelin). Certain larger cells of the interfollicular cortical stroma are homologous with the interstitial cells of the testis and are likewise presumably a source of sex hormone. The precocious follicles early suffer atresia and may be replaced by transitory corpora lutea and subsequent corpora albicantia, comparable to similar larger structures of the sexually functional ovary. By the third year all of the characteristics of the adult ovary are present and further changes result merely from the growth of elements already present.

Comparison of the development of the gonads suggests that the medulla of the ovary is the homologue of the testis as a whole; the cortex of the ovary is a secondary new formation and constitutes the specific female organ. The potential male condition of the medulla gives the morphologic basis, and supplies the explanation, for certain anomalous cases of incomplete sex reversal constituting anatomic hermaphroditism.

Development of the Uterus and Vagina

In the female the Müllerian ducts undergo progressive development, the degenerating Wolffian ducts persisting only in the form of atrophic remnants; this is the reverse of conditions in the

male. At the 20 mm. stage embryos of both sexes contain a pair of Müllerian ducts; their development was described above. As already indicated, the Müllerian ducts in their caudal course cross ventrad over the Wolffian ducts to enter the genital cord. Within the cord, where they lie side by side medial to the Wolffian ducts (fig. 11), they pass to the dorsal surface of the urogenital sinus (30 mm. stage). During the second month the adjacent termini of the Müllerian ducts fuse within the genital cord to form a single tube, the utero-vaginal primordium, complete at the 56 mm. stage (Koff, '33). An opening is established into the urogenital sinus in embryos of the third month. The site of confluence becomes raised into a rounded eminence, Müller's tubercle. This tubercle is the primordium of the future hymen (Taussig, '08).

The cranial portion of the fused segment of the Müllerian ducts constitutes the primordium of the uterus; the caudal segment develops into the vagina; the cranial paired segments become the uterine (Fallopian) tubes (Nagel, 1891). The abdominal aperture, the ostium abdominale, of each tube develops a series of projections which result in the formation of the fimbriae. The cranial end of the uterovaginal canal mesial to the openings of the uterine tubes is primitively concave (fig. 9); it changes to a convex form and develops into the fundus of the uterus. The area of junction between primitive uterus and primitive vagina elongates during the fifth month and differentiates into the cervix. A condensation of mesenchyme occurs around the uterovaginal canal and forms the musculature of the several segments. The original tubes become the mucosae of the uterus and vagina.

Prior to the middle of the fourth month there is no histologic difference between uterus and vagina, but at this period the originally cuboidal epithelium changes to a stratified squamous type in the vaginal segment and forms a solid columnar plug. This vaginal plug sub-

sequently becomes canalized in a caudo-cranial direction and a vaginal lumen reappears toward the end of the fifth month. According to Mijsberg ('24), the primitive vagina incorporates the bulbous terminals of the Wolffian ducts to form its caudal third. Koff ('33) and Frazer ('32) attribute the lower fifth of the vagina to an incorporation of secondarily formed bilateral "vaginal bulbs" which invaginate the posterior wall of the urogenital sinus and obliterate the "pars pelvina"; they deny any participation of the proximal ends of the Wolffian ducts in this process of extension of the vagina. Uterine glands make their appearance during the seventh month but remain small and inactive until puberty. As the vagina expands in its lower portion, Müller's tubercle becomes compressed into a disc of mesenchyme, lined internally by vaginal epithelium and externally by the epithelium of the urogenital sinus, the future vestibule. This disc constitutes the hymen; it becomes perforate sagittally to form the ostium vaginae.

In the male the Müllerian ducts disappear except for a cephalic remnant, the appendix testis (sessile hydatid); and a caudal fused portion (fig. 12), the vagina masculina (sinus pocularis). Müller's tubercle, or the later hymen, is represented in the male by the colliculus seminalis, a small hillock at the apex of which the vagina masculina opens into the urethra.

The more common anomalies of the female internal genitalia include various degrees of duplication of the uterus, in the extreme condition including the vagina. This duplication finds its ready explanation in terms of degrees of arrest in the normal process of fusion of the primordial Müllerian ducts within the genital cord.

The External Genitalia

Toward the end of the first month the hind-gut becomes dilated near its caudal end. This dilated region is the cloaca. From its caudal border projects the short transitory tail-gut. Its cranial

border is continuous ventrally with the allantois of the developing umbilical cord, dorsally with the hind-gut. Its latero-dorsal walls receive the openings of the pair of Wolffian ducts. The cloaca, accordingly, is a transitory common receptacle for products from the digestive, nephric and genital systems; as such this early embryonic condition in man recalls definitive conditions in reptiles and birds.

Externally there appears a linear depression, extending from the base of the tail to the umbilicus. The floor of this depression is the cloacal membrane, composed of ectoderm and entoderm. Beginning at the 5 mm. stage a fold of mesoderm invades the cranial border of the cloaca in the region between dorsal hind-gut and ventral allantois. This *urorectal septum* grows caudad and divides the cloaca into dorsal rectum and ventral urogenital sinus, separated by an extension of the celom (figs. 13 and 14). At the 12 mm. stage (seventh week) the urorectal septum fuses with the cloacal membrane and divides this into a cranial urogenital membrane and a caudal anal membrane. The urogenital (urethral) membrane, as the floor of the future urethral groove, becomes perforate between the 13 and 18 mm. stages. The anal membrane, as the floor of the anal pit, ruptures at about the 25 mm. stage. Growth of mesoderm about the anal pit (pore) deepens this depression and forms the definitive anus. The perineal region develops from mesoderm in the area of fusion between urorectal septum and cloacal membrane.

In the ventral division of the cloaca, namely the urogenital sinus, changes begin at the 10 mm. stage which result in the demarcation of an expanding cephalic vesico-urethral primordium and a narrow caudal phallic portion. The lumen of the vesico-urethral sac is continuous cranially with the allantois; at the latero-dorsal border it receives the Wolffian ducts and the budding ureters. The dilated cranial portion of the vesico-urethral primordium develops into the

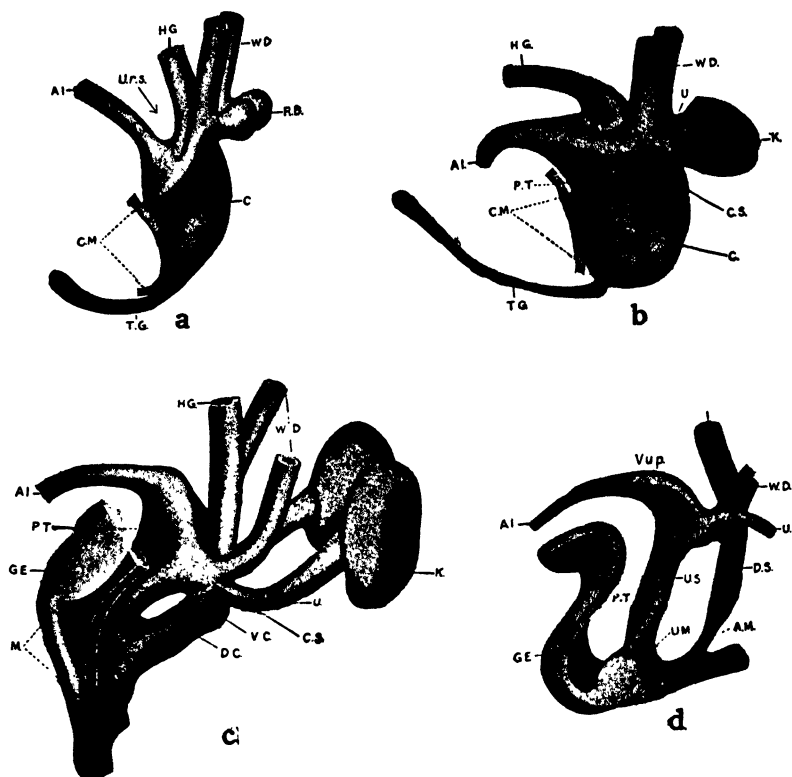


FIG. 13, A, B, C, D. Lateral views of models of the cloaca in human embryos at successive stages of development (Pohlman). A, 5.0 mm.; B, 7.0 mm.; C, 12.0 mm.; D, 16.0 mm. AI, allantois; A. M., portion of anal membrane; C, cloaca; C. M., cloacal membrane; C. S., cloacal segment of Wolffian duct; D. C., dorsal cloaca; D. S., rectum; G. E., genital eminence; H. G., hind gut; K., kidney; P. T., precloacal mesodermal tissue; R. B., ureteric bud; T. G., tail gut; U., ureter; U. S., urorectal septum; Ur. S., urorectal septum; U. M., position of urogenital membrane; V. C., ventral cloaca; V.u.p., vesico-urethral primordium.

future bladder (fig. 14). The apex of this sac becomes the urachus; in continuity with the allantois it persists in the adult as the middle umbilical ligament. Our further interest in this connection concerns only the caudal less dilated segment of the vesico-urethral sac and the continuous phallic portion of the original urogenital sinus. The urethral constituent of the sac becomes that portion of the prostatic urethra above Müller's tubercle in the male, the entire urethra in the female. The phallic portion of the urogenital sinus is a feature of the genital tubercle of both sexes; it develops into the membranous and cavernous segments of the male ure-

thra; in the female it merges with the vaginal vestibule.

The close association in normal development between rectum, bladder, allantois, urethra, Müllerian ducts, Wolffian ducts and ureters gives opportunity for the production of many anomalies of the urogenital system. Failure of normal caudal extension of the urorectal septum results in a condition of persistent cloaca. Faulty development in the region where the genital cord fuses with the dorsal wall of the urogenital sinus results in variations in the ureteric openings: they may terminate in the rectum, urethra, uterus, vagina or even in the seminal vesicles. The allantois

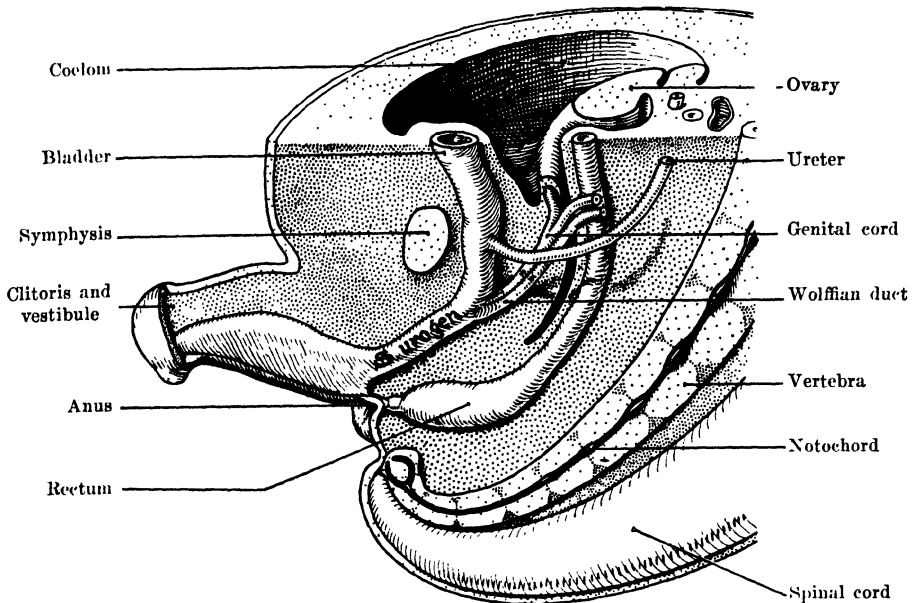


FIG. 14. Reconstruction of female genito-urinary system of a 29 mm. human fetus, viewed from the left side. (Kollmann.)

may remain patent from umbilicus to bladder and so establish a condition of urinary (urachal) fistula at the navel.

Beginning with the sixth week (10 mm. stage) significant external features make their appearance, the result chiefly of local increase of mesoderm. The primary mesodermal swelling occurs at the cranial border of the cloacal membrane, at the root of the body stalk (umbilical cord). This elevating area, discernible in embryos of 8 mm., is the *genital tubercle*, primordium of the clitoris and penis (fig. 15). A pair of caudo-lateral extensions of this tubercle constitute the genital folds (urethral folds), primordia of the labia minora in the female, wall of cavernous urethra in the male.

Distally the urethral groove is limited by a fold of epithelium, the transitory so-called epithelial tag (Spaulding, '21). Bordering the urethral folds are a pair of prominent labio-scrotal swellings, primordia respectively of the labia majora and the scrotum. The so-called lateral buttresses (Spaulding) are prominent lateral swellings at the base of the genital eminence in embryos of 16

mm. By the 20 mm. stage these "buttresses" have migrated medially and appear to have merged with the base of the phallus. The conditions of the end of the sixth week (12 to 16 mm.) with genital tubercle, urethral folds bounding a urethral groove, and labio-scrotal swellings mark the end of the indifferent stage of the external genitalia.

Spaulding claims that sex differentia appear in the external genitalia from the first appearance of the genital eminence. His differential criteria concern the length of the urethral groove, and the degree of curvature of the phallus. In the prospective male the urethral groove is longer, extending into the terminal glans region, and more open distally; in the female the groove ends at the base of the glans and is widest at the base of the phallus. The phallus of the prospective female is characterized near the end of the second month by a greater caudal decurvation; that of the male remains more nearly at right angles with the body. Herzog ('04) had earlier made the same observation. Szenes ('25) in general confirms the

findings of Spaulding; he believes that differential morphologic features of the external genital primordia furnish reliable criteria for the recognition of sex in embryos from 18 mm. upward.

However, Wilson ('26) on the basis of his study of a large series of young embryos concludes that "the various criteria laid down for determining the sex of a given embryo from examination of the external genitalia are extremely unreliable and can only be applied with accuracy to embryos exceeding 50 mm. crown-rump length." Using the criteria of Spaulding, Wilson found that when a diagnosis of male sex was made in a given case, the percentage of error was much lower than when he diagnosed an embryo as female. He finds that retardation of development of the ex-

ternal genitalia is a frequent occurrence in male embryos.

Morphogenesis of the Male External Genitalia

The genital tubercle in the presumptive male undergoes relatively excessive growth. By the seventh week (21 mm. stage) it has elongated into the cylindrical *phallus*, which terminates in a rounded glans delimited by a coronal groove (fig. 15, B). As the phallus elongates the urethral folds are drawn out along the caudal surface (Tourneux, 1899). No pronounced morphological changes occur until the 38 mm. stage (tenth week); this stage marks the beginning of the definitive period (Spaulding). The urethral folds fuse progressively and close the urogenital opening

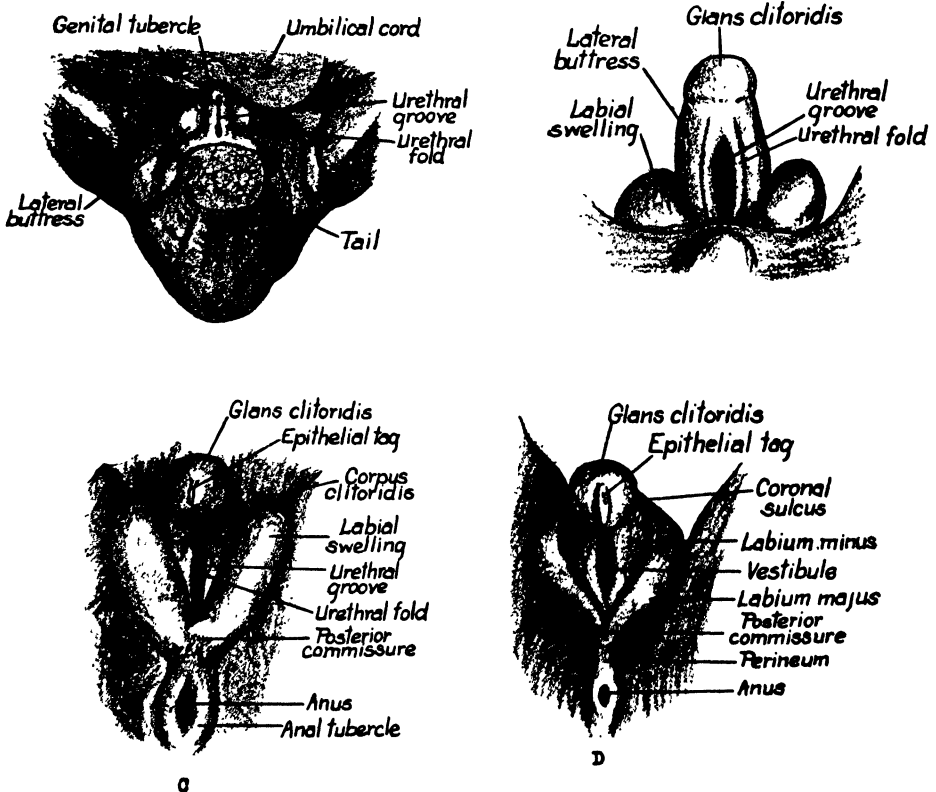


FIG. 15. Successive stages in the development of the human male external genitalia (Spaulding). A. Genital tubercle period, 14 mm. embryo. B. Phallus period, 21 mm. embryo. C. Beginning of definitive period, 45 mm. fetus. D. Later stage of definitive period, 58.8 mm. fetus. (From Jordan and Kindred's Textbook of Embryology.)

for some distance up the shaft of the phallus. The fused margins of these folds constitute the penial and scrotal raphé. The scrotal swellings shift caudad and become the respective halves of the scrotum. By the fourteenth week the urethra has closed as far as the glans. From the distal margin of the urethral orifice a sagittal plate of epithelium grows to the tip of the glans. This is the urethral plate, the primordium of the apical urethra. In fetuses of 105 mm. the urethral plate, which incompletely bisects the glans penis, becomes converted into a groove, the borders of which fuse to form a tube. This process completes the development of the continuous penial urethra. A detailed description of the later development of the urethra in the male with special reference to the smaller urethral glands is given by Johnson ('20).

Meanwhile, between the 65 and 100 mm. stages, an epithelial collar grows backward into the surface of the glans. This is the primordium of the foreskin or prepuce. At birth the epithelial collar undergoes a gradual vesiculation centrally, thus eventually separating a movable prepuce from the glans. The region of formation of the glans portion of the urethra does not take part in the development of the prepuce but contributes a fold of skin which persists as the frenulum. The mesenchyme of the shaft of the phallus becomes organized into three columns of erectile tissue, that of the glans into a single mass. Two columns lie above the penial urethra, the third or ventral column encloses the urethra. The dorsal columns become the corpora cavernosa penis; the ventral column, together with the mesenchymatous mass of the glans, becomes the corpus cavernosum urethrae.

Failure of fusion of the urethral folds results in the anomaly of hypospadias. The much rarer condition of fission on the opposite surface (epispadias) results from a reversal of the normal positional relation of the genital tubercle cranial to the urogenital membrane, thus

causing a shift of the urethral groove to the cranial surface of the phallus. The open urethra of epispadias is frequently in continuity with a defect in the anterior body wall and associated with eversion (exstrophy) of the bladder. The primary cause of this serious anomaly is presumably an excessive cranial extension of the perforation in the urogenital membrane for a variable distance on the primitive cloacal floor. Other rare anomalies include absence of penis and double penis, the result respectively of suppressed and duplicated genital tubercle. Approximately thirty cases of duplicate penis are on record in the literature, the majority of the bilateral type. Developmental arrest of the phallus, sometimes associated with persistent opening of a portion of the urogenital sinus, results in various degrees of the condition designated false masculine hermaphroditism.

Accessory Genital Glands in the Male

During the twelfth week there appear around the openings of the common ejaculatory ducts five distinct groups of tubular outgrowths from the urethral epithelium (fig. 12), foreshadowing the future lobes of the prostate gland (Evatt, '09). These tubules total on the average 63 in number, each opening separately into the urethra (Lowsley, '12). These entodermal tubules grow into the suburethral mesenchyme which differentiates into the collagenous connective tissue and smooth muscle cells composing the characteristic stroma of the definitive three-lobed gland. At about the twenty-second week the primitive anterior and middle lobes begin to regress and are insignificant in the adult; their remnants become merged with the definitive lateral lobes.

Cowper's glands (bulbo-urethral glands) arise as a pair of solid buds from the entodermal lining of the membranous urethra. These primordia appear during the ninth week (Eggerth, '15). The buds acquire a lumen; the branching tubules grow toward the bladder and, invading the mesenchyme of

the forming corpus cavernosum urethrae, assume definite glandular form during the fourth month.

Morphogenesis of Female External Genitalia

The female external genitalia represent a lesser degree of modification of the indifferent condition. No great changes occur until the fetus is from 38 to 45 mm. in length (fig. 16). These changes then parallel the more prominent modifications in the male. A coronary sulcus appears on the phallus delimiting a glans from a shaft. Only slight further development occurs in the phallus of the female, and the parts are now recognizable as the glans clitoridis and the corpus clitoridis (Nagel, 1894). The corpus consists of two cyl-

inders of erectile tissue homologous with the corpora cavernosa penis of the male. The prepuce and frenulum develop in a manner similar to their development in the male, but at a much later period. The urethral folds at the base of the phallus remain apart and by growth give rise to the labia minora. The widely open urethral groove constitutes the vestibule of the vulva. The labio-scrotal swellings grow caudad and unite beyond the urogenital opening in front of the anus to form the posterior commissure. These swellings grow in bulk to form the labia majora. Local increase in the mesenchyme cranial to the clitoris produces the mons veneris at a relatively late period. The bulbus vestibuli, a mass of erectile tissue bordering the vaginal and urethral orifices, is

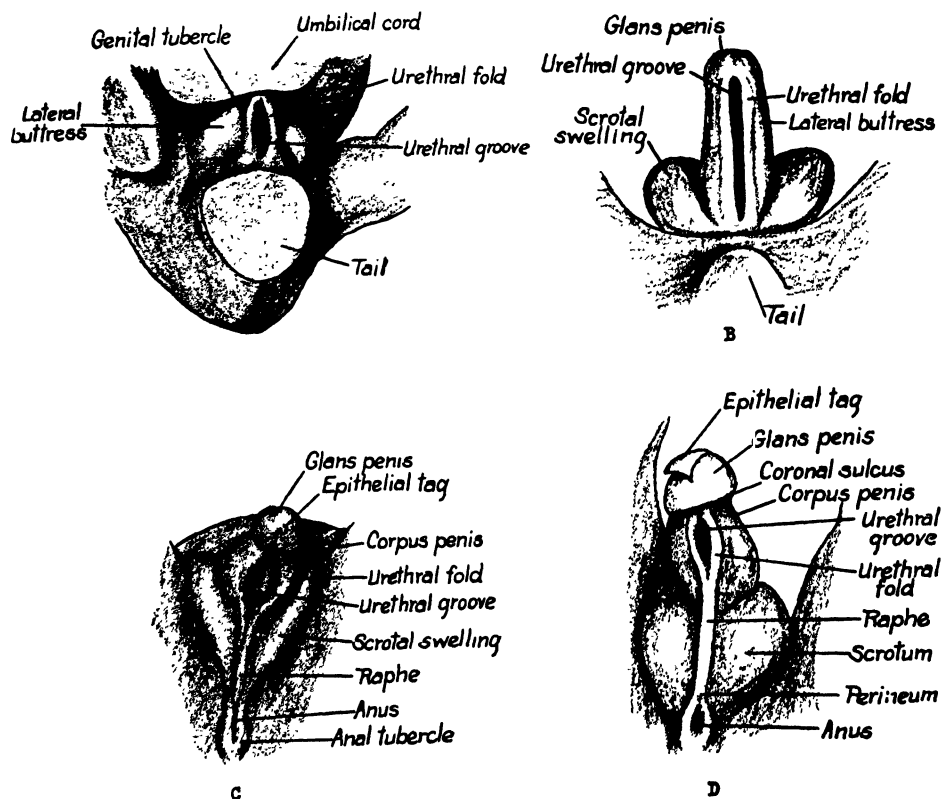


FIG. 16. Successive stages in the development of the human female external genitalia. A. Genital tubercle period, 14 mm. embryo. B. Phallus period, 21 mm. embryo. C. Beginning of definitive period, 49 mm. fetus. D. Later stage in definitive period, 54 mm. fetus. (Jordan and Kindred.)

the homologue of the corpus cavernosum urethrae of the male.

On either side of the vestibular orifice of the urethra appear evaginations of lining cells during the twelfth week to form the rudimentary para-urethral glands of Skene, homologues of the several lobes of the prostate gland of the male. Similar outgrowths during the tenth week near the lower vestibular side of the hymen produce the vestibular glands of Bartholin, homologues of the paired bulbo-urethral glands of Cowper of the male. Relatively excessive development of the clitoris gives a condition of feminine false hermaphroditism.

The more important facts in the foregoing description are summarized in the table on pages 196 and 197.

Descent of the Testes

The primordium from which the testis develops is a ridge of proliferating cells on the ventromedial border of the mesonephros. This genital ridge, as described above, becomes constricted from the mesonephric fold except for a cranio-

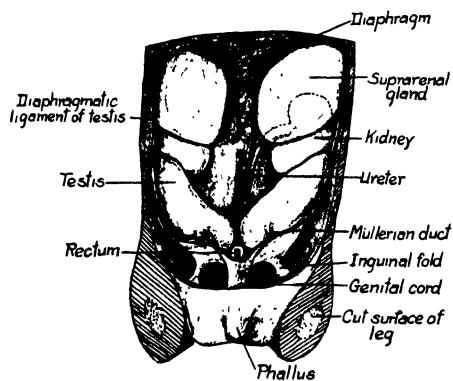


FIG. 17. Ventral view of dissection of a 30 mm. human male fetus, showing the condition of the urogenital system. (Jordan and Kindred.)

lateral mesentery, the mesorchium. Both genital ridge and mesonephric fold early suffer atrophy cranially; the resulting continuous band of fibrous connective tissue forms the transitory diaphragmatic ligament of the testis. The caudal pole of the original genital ridge

likewise becomes ligamentous and this band of connective tissue, together with the caudal undivided portion of the urogenital folds, becomes the proper ligament of the testis.

It will be recalled that caudally the undivided urogenital folds of the two

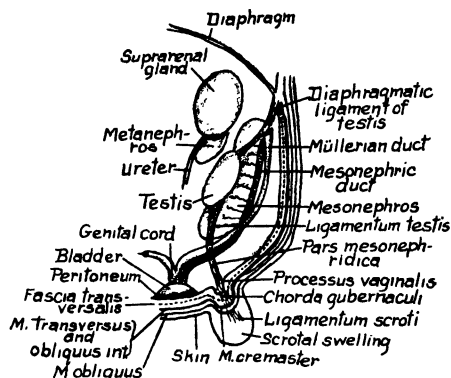


FIG. 18. Diagrammatic representation of the relationships of the ligaments of the testis. (Jordan and Kindred, after Broman.)

sides meet on the dorsomedial surface of the urogenital sinus and fuse to form the genital cord, and that this cord or bridge of connective tissue supports the caudal ends of both the Wolffian ducts (laterally) and the Müllerian ducts. Following the degeneration of the Müllerian ducts in the male, the genital cord fuses with the posterior wall of the bladder. Toward the end of the third month an inguinal fold (ligament) grows up from the inguinal crest of the ventral abdominal wall and joins the ligamentum testis where the latter ends on the genital cord (fig. 17). Within this inguinal fold the mesenchyme condenses to form the chorda gubernaculi.

The developing musculature of the abdominal wall grows around this mass, leaving a canal, the inguinal canal. Muscle fibers from the transverse and oblique muscles enclose the chorda gubernaculi in a mantle-like manner. The external oblique muscle grows around the outer end of the chorda gubernaculi and leaves a foramen through which the chorda is connected with a second mesenchymatous cord, the ligamentum

Table of the Adult Male and Female Derivatives of the Fetal (Indifferent) Reproductive System.—(*The vestigial structures are given in italics, synonyms in parentheses.*)

INTERNAL GENITALIA

<i>Indifferent Stage</i>	<i>Male</i>	<i>Female</i>
Genital fold.	Testis Mesorchium. Ligamentum testis portion of gubernaculum testis.	Ovary. Mesovarium. Ligamentum ovarii.
Mesonephric fold.	<i>Diaphragmatic ligament of testis.</i> Middle part of gubernaculum testis (in part).	<i>Diaphragmatic ligament of ovary.</i>
(a) Cranial group of mesonephric tubules.	(a) Globus major of epididymis (ductuli efferentes).	(a) <i>Epoöphoron</i> (parovarium; organ of Rosenmüller), and probably <i>appendix ovarii</i> (hydatid of Morgagni)
(b) Middle group of mesonephric tubules.	(b) <i>Paradidymis</i> (organ of Giralde's).	(b) <i>Paroöphoron.</i>
(c) Caudal group of mesonephric tubules.	(c) <i>Ductuli aberrantes.</i>	
Mesonephric (wolffian) duct.	<i>Appendix epididymidis</i> (stalked hydatid). Corpus and cauda epididymidis. Ductus deferens. Seminal vesicle. Ejaculatory duct	<i>Appendix fimbriæ.</i> Collecting duct of <i>epoöphoron</i> (canal of Gartner).
Müllerian duct.	<i>Appendix testis</i> (sessile hydatid).	<i>Appendix ovarii.</i>
	<i>Sinus pocularis</i> (vagina masculina; <i>utriculus prostaticus</i>).	Uterine tube. Uterus Vagina.
Genital cord.	Middle part of gubernaculum testis (in part).	Broad ligament of uterus.
Inguinal fold.	Caudal end of gubernaculum testis.	Round ligament of uterus.

INTERNAL GENITALIA

<i>Indifferent Stage</i>	<i>Male</i>	<i>Female</i>
Müller's tubercle.	Colliculus seminalis.	Hymen.
Urogenital sinus.	Prostatic and membranous urethra.	Urethra. Vestibule.
	Prostate gland. Bulbo-urethral glands of Cowper.	Para-urethral glands of Skene. Vestibular glands of Bartholin.

EXTERNAL GENITALIA

Genital tubercle.	Glans penis. Corpus penis.	Glans clitoridis. Corpus clitoridis.
Urethral folds.	Raphé.	Labia minora.
Labioscrotal swellings.	Scrotum.	Labia majora. Posterior commissure.

scroti (fig. 18). The external end of each scrotal ligament is inserted internal to the scrotal swelling. Subsequently a fibrous cord develops within the genital cord and unites the caudal end of the ligamentum testis with the cranial end of the chorda gubernaculi to form a continuous fibrous cord, the gubernaculum testis, extending from the scrotal swelling to the testis.

The earliest phase of the descent of the testis is the result of unequal growth between testis and body wall; the testis grows at its caudal pole, the trunk elongates relatively more in a cranial direction. As a result of these processes the testes come to lie at the boundary between the abdominal cavity and the pelvis. While these changes are taking place, during the third and fourth months the saccus vaginalis appears as an evagination of the body wall on either side in front of the attachment of the gubernaculum testis. Coincident with growth of the surrounding body wall the saccus (processus) vaginalis deepens, and its position is marked externally by the scrotal swelling. The

evagination of the scrotal sac causes further caudal traction on the testis. During the seventh month the testis is drawn into the vaginal sac, the result in part of an actual shortening of the gubernaculum testis (fig. 19); according to Hart ('09) the effect of disproportionate growth of inguinal canal and testis.

Since the gubernaculum and testis are retroperitoneal in position, they remain beneath the posterior wall of the saccus vaginalis. They thus secure a double investment of peritoneum constituting the tunica vaginalis, one layer covering the testis and gubernaculum, the other lining the scrotum. The testis in its descent carries with it the spermatic blood vessels, nerves and the ductus deferens. Contributions from the fascia transversalis contribute to the connective tissue of the spermatic cord; the cremaster muscle derives from the internal oblique muscle. Shortly after birth the narrow inguinal canal between the abdominal cavity and the vaginal sac normally constricts and eventually becomes closed.

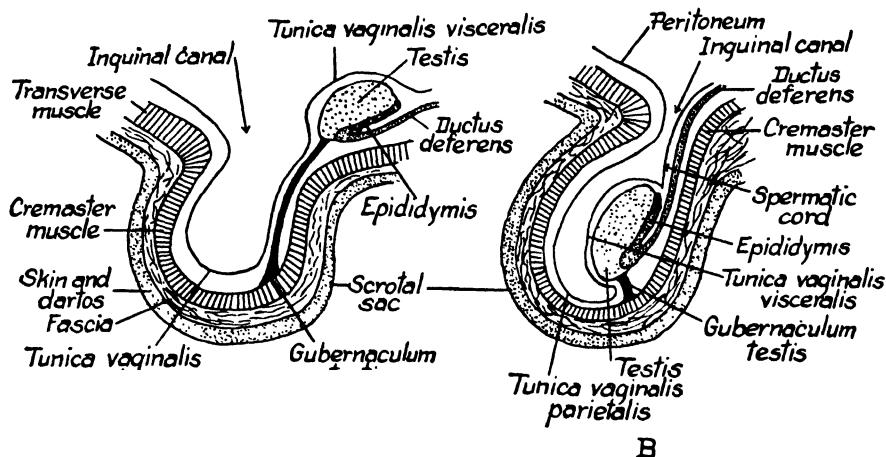


FIG. 19. A and B. Diagrams illustrating the descent of the testis. A. Early stage showing the testis above the inguinal canal and the open vaginal sac (sixth month). B. Later stage (newly born), showing the testis descended, the gubernaculum having shortened to approximately one-fourth its earlier length. (Jordan and Kindred, after Hertwig.)

Descent of the Ovaries

Early conditions as regards the genital ridge of the prospective female and the associated mesonephric ridge are similar to those described for the male. However, the great development of the

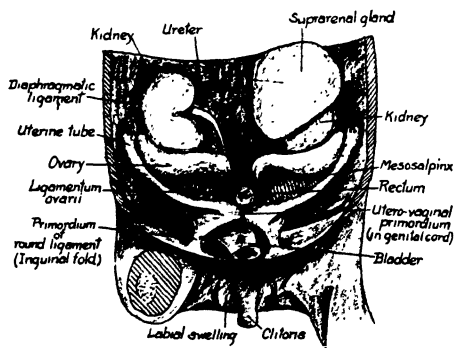


FIG. 20. Ventral view of dissection of a 33 mm. human female fetus, showing the condition of the urogenital system. (Jordan and Kindred.)

uterus by fusion of the Müllerian ducts within the genital cord imposes later decided differences. The genital cord remains distinct from the bladder, the space between them constituting the vesico-uterine pouch. The genital cord grows with the uterovaginal primordium

and eventually forms the broad ligament of the uterus. The caudal end of the genital fold, between the ovary and the uterus, forms the ligamentum ovarii, primordium of the definitive proper ligament of the ovary. An inguinal fold forms as in the male, extending from the point of insertion of the ovarian ligament on the wall of the developing uterus to the inguinal crest (fig. 20).

The inguinal fold likewise condenses to become a chorda gubernaculi, and this unites with a secondary mesenchymatous cord, the ligamentum labiale attached to the labial swelling, the two constituting a gubernaculum which persists as the round ligament of the uterus

sition of the uterus the traction of the shortening gubernaculum has no effect on the ovary. However, at about the seventh month the ovary descends by lateral rotation from the abdominal cavity into the retro-uterine compartment (upper strait) of the pelvis ("true pelvis"). Shallow peritoneal pockets, the homologues of the processus vaginales of the male, may persist as the so-called diverticula of Nuck.

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H. E. J.

ENDO GAMY (Greek: *endon*, within; *gamos*, marriage). Among primitive races, marriage within the tribe, group or clan only; opposed to exogamy.

EPHIALTES (Greek). Literally, "one who leaps upon." The term came to be identified by the demonologists with the Latin incubus; it is so used by Bodin and others.

EROTOCRAT. Georg Hirth's term for a man of powerful sexuality.

EROTOGENESIS OF RELIGION, the theory held by some modern psychologists, that religion had its origin in primitive man's ignorant mystification and exaltation over sex, through which originated sex worship. Sex is the oldest and geographically the widest spread object of religious adoration. According to this theory the advent of religion was a phenomenon of racial adolescence. The theory, that individual evolution is a condensed recapitulation of our racial evolution, finds confirmation in the fact that even in our time, religion is peculiarly a phenomenon of adolescence and pubescence.

In our racial development the advent of the split personality evolved around the separation of the physical from the psychologic aspect of sex. Usually the physical aspects of sex were depreciated through a growing sense of guilt, while the psychologic aspects of sex were correspondingly exalted. With growing intensification of the inner conflict, the psychologic aspect of sex became "purified," and separately regarded as superphysical, that is, spiritual and superhuman. In the Christian, this superhuman valuation of sex was expressed as divine or satanic, according to whether or not there was a consciousness of any accompaniment of physical sexuality.

The phallic gods were thus converted into Christian devils and their priests came to be regarded as emissaries of evil, or as witches and wizards. Now an erotic ecstasy, wholly free from the consciousness of sex, is very often accepted as the mystical experience of God, if it is accompanied by an acceptance of the proper orthodoxy in mystical theology. Such, in brief, is the erotogenetic explanation of religion.

The phrase, erotogenesis of religion, was first used by Theodore Schroeder (Alienist and Neurologist, 1907, 330-41); see also his *Bibliography on the Psychology of Religion* (1924); *Converting Sex into Religiosity* (Medical Review of Reviews, 1930, 405-15); *Witchcraft and the Erotic Life* (Journal of Nervous and Mental Disease, 1930, 640-51).

T. S.

ESSAYEURS, men employed in brothels to act in a lascivious manner with the prostitutes in the presence of visitors in order to induce hesitant clients to indulge in fornication.

Louis Fiaux: *Les Maisons de Tolérance* (Paris, 1892).

ESTHETICS OF PLASTIC SURGERY. Plastic surgery deals with the repair of deformities of the skin and underlying soft tissues on all parts of the body. Skeletal abnormalities, with the exception of the osseous structures involved in malformations of the nose, chin and other portions of the face, come within the domain of orthopedics.

In many if not most cases, the cosmetic element is complicated by a disturbance of function. An adherent scar on the face of a child, for example, may prevent normal development of the surrounding parts; or an ectropion of the lip may interfere with speech and mastication. Naturally the reconstructive procedure attempts to restore normal function as well as to produce a harmonious exterior.

On the other hand, even when restoration of function is the primary motive for surgery, esthetic considerations guide the procedure throughout. The part must be restored as nearly as possible to normal appearance and normal use; and both purposes must be achieved with a minimum of scarring.

This omnipresent *esthetic element* has resulted in the development of certain general principles, unique to reconstructive surgery, that influence all its procedures, regardless of the portion of the body involved. In addition to the basic laws that govern all surgery, the plastic surgeon must be thoroughly grounded in the esthetic concepts out of which his specialty has grown.

The impulse of self-beautification has formed an unbroken thread in human history. Cosmetics were as important in the civilizations of thousands of years ago as they are to-day. The most primitive tribes are as assiduous in the pursuit of their ideals of beauty as the inhabitants of the most sophisticated capitals of the globe.

In spite of this identity of purpose, there has always been a wide divergence of esthetic standards in different regions and periods. Concepts of beauty vary geographically and chronologically, with the result that certain races submit to intense pain to achieve cosmetic effects that others would undergo equal pain to obliterate. Tattooing, for instance, is a highly prized decoration among many tribes, which cover large areas of the face and body with complicated designs in spite of the discomfort inflicted in the process. Other primitive peoples endure the literal torments of salt in a raw wound in order to produce the scars that satisfy their esthetic ideal. Throughout Asia, Africa and Australia there are multitudinous examples of deformation of face and form to comply with local cosmetic conventions.

The situation is not strikingly different in so-called civilized regions. Pigments are generally used to tint cheeks, lips, hair and eyelids; eye-lashes are added and brows obliterated; and constrictive garments may actually deform the body while creating an illusion of slenderness and symmetry.

In view of this universality of the esthetic impulse it is not surprising that surgery was invoked, early in its history to repair the ravages of accident and disease. The Ayurveda, sacred medical writings of the Hindoos, described methods for skin-grafting over two thousand years ago; and nasal reconstruction was practised by the Tilemakers' Caste in India before the Caesars established their empire. Modern rhinoplasty still employs the forehead flaps devised by the ancient Hindoos, modified, of course, to conform to the surgical principles of to-day.

The Greeks, whose appreciation of the esthetic has been unequalled by any other race, were naturally interested in the eradication of deformity; and they attempted the treatment of many congenital malformations. Rome followed in Greece's footsteps. Celsus, the Roman encyclopedist, has left us detailed records of plastic operations on the face that required the shifting of living tissues. At the end of the second century Galen described a technique for restoring lost portions of the lips, ears and nostrils.

The second great step in the history of plastic surgery, like the first, was taken for the repair of nasal deformities. In the sixteenth century loss of part or all of the nose, from accident or disease, was a relatively frequent occurrence in Europe, as it had been in ancient India. The Italian Gasparo Tagliacozzi (1546-99) attempted to mitigate this disfigurement by taking skin from the arm to build a new nose. Long after Tagliacozzi plastic repair lagged and artificial appliances for the concealment of malformations replaced surgical attempts to eradicate them. Then Joseph Constantine Carpue (1764-1846), a famous teacher of anatomy at a London medical school, revived the Indian method of rebuilding the nose with a flap cut from the forehead (1816). From then on progress was steady if slow, until the grotesque pageant of disfigurement set in motion by the World War gave reconstructive surgery an impetus which has led to the virtual conquest of deformity and established plastic repair among the recognized surgical specialties.

It was an amazing revelation of the depth of the esthetic instinct, during the war, to see soldier after soldier, emerging into consciousness after surgery, inquire with his first waking breath not into the extent of his disability but into the degree of his deformity. The situation is no different in civilian life, where even a slight malformation may bar the road to social or economic success and the conscious-

ness of disfigurement frequently induces profound psychological disturbances having a far-reaching effect on health and happiness. Certain observers go so far as to say that ugliness is a disease, to be treated as unhesitatingly as any functional disorder. Without subscribing to this view in its entirety, it is indisputable that in many cases the eradication of a cosmetic defect restores psychic and emotional stability and sets the patient on the road to a normal social and economic life.

While no strict division is possible, it is convenient to classify deformities in three groups: (1) the malformations of infancy and childhood, (2) those present in adolescence and early maturity and (3) the disfiguring stigmata of real or premature senility. The treatment of any given abnormality is naturally the same in any age group.

DEFORMITIES OF CHILDHOOD.—The deformities of childhood are of two types, congenital and acquired. Passing over the obstetrical palsies, which usually respond rapidly to treatment, and the supernumerary digits, which are easily removed, the most important congenital malformations are cleft lip and naevi of various kinds.

Cleft lip—or *harelip*, as it is more commonly known—is a fissure of the upper lip, a little to the side of the midline, caused by failure of the parts to unite properly before birth. The fissure may be partial or complete, in the latter case extending into the nostril. It may be present on both sides or unilateral.

The cause of cleft lip has not yet been discovered, although it occurs approximately once in every twenty-five hundred births. There is strong evidence of a familial tendency to this condition, but the hereditary factor does not lie in any disease and appears to be transmitted through collateral issue as often as along the line of direct descent.

Fortunately this deformity yields to early correction. Within four to six weeks after birth the child is usually strong enough to withstand the strain of surgery and plastic repair can obliterate almost all signs of the congeni-

tal disfigurement. There is no dearth of necessary tissue—the malformation is due solely to a failure of union—and the surgeon painstakingly unites the separated parts, joining mucous membrane to mucous membrane, muscle to muscle and skin to skin so that the elaborate configuration of the normal mouth is reproduced. The vermilion border must be unbroken, the lip protruding and of normal length. The repair is not complete unless the flattening of the nostril which accompanies cleft lip is also corrected.

Although the maximum benefits are not to be expected unless reconstruction is undertaken early, late repair is preferable to none and considerable improvement can be effected. In cases where the corrective procedure has been imperfectly performed, a displacement of the vermilion border may result, revealed by a conspicuous Z-shaped notch in the red of the lip. Secondary repair should be undertaken in such cases, for harmony of contour is as essential as healing in plastic surgery.

While the cleft palate that frequently accompanies harelip is primarily a functional problem, it has its esthetic aspects too, for distressing speech disturbances result if the abnormality is not corrected before the infant learns to talk. Repair of the palatal fissure should be undertaken between the ages of twelve and eighteen months.

Birthmarks—or *naevi*—comprise the other important group of congenital blemishes. In this classification fall the port-wine marks, moles, hemangiomas and lymphangiomas which, if extensive enough, lend a repellant aspect to an otherwise normal child.

The method of repair naturally varies with the nature and size of the naevus. In some cases simple or repeated excision suffices to eradicate the malformation; in others skin grafts of one type or another must be employed. The latter procedure always entails important cosmetic considerations. Unless the transposed skin matches the surrounding area in color and texture the



FIG. A

Overdeveloped nasal deformity in association with markedly underdeveloped chin in girl of 17. Premature birth.

graft cannot be considered perfect, no matter how well it has taken in its new location. Absolute perfection, unfortunately, cannot always be achieved.

Parental distress usually dictates an early request for repair in cases of conspicuous naevi. If the reconstruction must be done serially, it is often advisable to defer correction until the patient is old enough to cooperate and submit to a local anesthesia. Frequently, however, an awareness of the blemish clouds the child's happiness and produces undesirable psychological reactions. When this occurs, repair should be promptly undertaken.

The acquired deformities of childhood do not differ materially from those of adult life; but the cosmetic damage may be greater if correction is delayed, due to a possible interference with normal development. An adherent facial scar from a burn may prevent the surrounding tissues from developing fully, resulting in an asymmetry of the face. In the same way a ridiculously small



FIG. B

The underdeveloped chin was reconstructed by inserting two rib cartilage grafts through a half-inch incision in the natural fold of the lower surface of chin. The size and shape of the cartilaginous graft are prepared according to a pattern. The curvature of the graft is obtained by retaining the perichondrium and excising small triangles from the cartilage. Over-sized deformity of nose corrected endonasally in usual way.

nose on a massive face may bear witness to an unreduced fracture in childhood.

The elimination of scars entails many of the considerations present in the removal of naevi. It does not do to replace one deformity with another and every precaution must be taken to minimize cicatrization from the reparative procedure. When grafting is necessary—the choice of skin must be governed by the texture and coloring of the area to be supplied.

DEFORMITIES OF MATURITY.—Between the ages of fifteen and twenty, face and form reach adult proportions; and many latent malformations reveal themselves. In this intensely emotional and sensitive period, the consciousness of deformity may lead to serious neuroses. Emerging from a more or less sheltered

childhood into the realities of social and economic competition, the youth burdened with a real or fancied blemish attributes the inevitable rebuffs and failures that await him to his disfigurement. In many cases correction of the cosmetic defect is promptly followed by a restoration of emotional stability.

Nose.—By far the commonest and most conspicuous deformities that afflict adolescence are those of the nose. Located in the direct center of the face, the position and protruberance of this feature lend prominence to any abnormality. A slight malformation may make the difference between a pretty face and a plain one. A marked defect may completely disfigure an otherwise beautiful countenance.

The modern western world has taken as its esthetic ideal the Greco-Roman type described in the Shadow Canon. This demands that the nose occupy half the space between the brows and the lower border of the chin. The profile angle—that formed by the nasal bridge and the line from forehead to chin—should measure about thirty degrees; and the lower surface of the tip of the nose should form slightly more than a right angle with the upper lip. There should be a definite angulation at the juncture of the forehead with the nose.

There are many possible deviations from this ideal. The over-developed nose may be too long, humped, hooked, scoliotic or too broad. In the category of under-sized noses are the small, flat and saddle back types, due to a failure of normal development or to loss of part of the framework as a result of accident or disease. When skin as well as framework is missing, from whatever cause, the condition is one of total or partial loss of the nose, depending on the extent of the deficiency.

Fortunately rhinoplasty constitutes one of the most brilliant chapters in the story of surgical reconstruction. Within reasonable limitations, plastic surgery can create a normal nose out of any type of deformity. Naturally the artistic perception of the surgeon must be

highly developed so that he will rebuild individual features in harmony with the surrounding parts. The restored organ must conform not only to the universal esthetic canons but to the plastic line of the individual head.

Mouth.—With the exception of cleft lip, abnormalities of the mouth are not usually as striking as nasal deformities. The mobility of the lips, the ability to control their contour by voluntary muscular effort, disguise many malformations that would be highly conspicuous elsewhere on the face. In extreme cases of hypertrophy of the red of the lip or double lip it is a simple matter to make suitable crescent-shaped excisions from the mucous membrane on the inside of the mouth.

Frequently a normal and even pretty mouth appears deformed because of an imperfection in the nose, jaw or chin. The angle between the nose and upper lip is responsible for many seeming flaws in the mouth which disappear as soon as the nasal tip is properly rebuilt. A receding chin will make relatively thin lips appear heavy, while a mouth of normal size sinks into insignificance above a prognathic jaw. Harmony is achieved in such cases by repairing the malformation of the chin. Orthodontia has obliterated many apparent deformities of the mouth by correcting the underlying dental condition.

Facial Asymmetries.—Facial asymmetry is present in every one to a greater or lesser degree and it is only when the irregularity is marked that it detracts from the aesthetic value of the countenance. This occurs principally in facial paralysis, where the sagging and inactivity of the affected side are in grotesque contrast to the compensatory over-activity of the other cheek. The deformity is especially marked in adults who sustained the palsy in childhood, before full development of the face took place. The abnormality is masked by raising the sagging muscles with fascia strands. If there is a marked unilateral maldevelopment, fascia fat grafts are



A. COMMON TYPE OVERSIZED NASAL DEFORMITY WITH AN OTHERWISE NORMAL FACIAL CONTOUR



B. A STRIKING IMPROVEMENT OBTAINED BY REDUCING THE OVERSIZED NOSE IN ALL DIAMETERS



A. VICTIM OF AN AUTOMOBILE ACCIDENT

The injuries consisted of severe lacerations of the lip and cheek and fracture of the nose. For a number of weeks this young woman received treatment without regard for the cosmetic aftermath, resulting in the conditions shown above.

employed to fill out the undeveloped area.

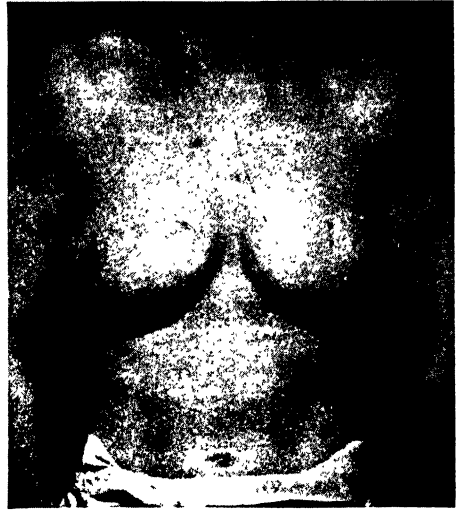
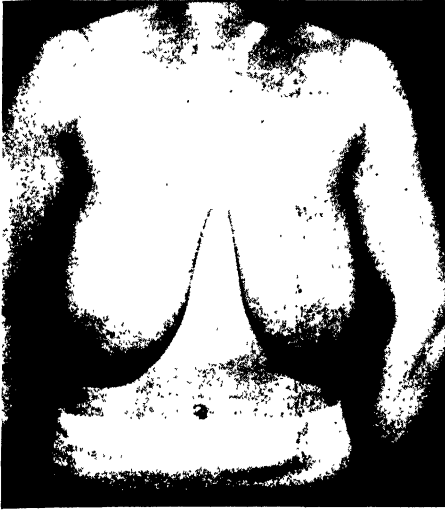
Ears.—Although deformities of the ears can be easily concealed in women, in men they detract considerably from the esthetic contour of the head. The ideal auricle is located at the center of the head and is two and a half times as long as it is wide. The cartilaginous portion is four times as long as the soft lobule at the bottom and is molded in an intricate and beautiful pattern.

Minor lapses from perfection are not noticeable in the ear. Partial or total absence of the external organ, an abnormally protruding auricle and the so-called cauliflower ear comprise the most striking malformations. While the replacement of a missing auricle is a difficult plastic undertaking other reconstructive procedures on the ear are easily performed and offer safe and certain relief from most of the common auricular deformities.

Breasts.—The repair of mammary deformities is a relatively recent achievement. The purely esthetic value of the breasts is enhanced by their functional importance and sexual significance. Any striking malformation is a source of intense distress to women of all ages.

The ideal breast of art is the normal breast of nature—a firm hemisphere of varying size with the nipple protruding from its center. The weight of this organ is sustained by the firm dermal structure, by fibrous projections between the gland and the skin and fibrous bands extending from the chest to the collar-bone. When the normally firm skin sags and the suspensory ligaments lose their elasticity, due either to the excessive weight of the mammae or the use of tight brassières, prolapse results and the breast becomes pendulous.

Hypertrophy, due to fatty overdevelopment, occurs as frequently in young girls as in older women. Since the breasts are virtually the starting point



Senile, pendulous breast in a girl of twenty-two, reaching almost to the umbilicus. Besides the physical discomfort attached to this condition, such as pain and a dragging sensation about the shoulders, this girl, who was otherwise slender and well formed, was debarred from the sports and social pursuits natural to her age.

for fashion, girls so afflicted are debarred from the realm of fashionable dress and the numerous social, sporting and professional activities which demand partial exposure of the chest. This is true also in marked mammary asymmetries and the prematurely senile breasts which are seen in many comparatively young women.

In the past twenty years remarkable advances have been made in mammary reconstruction. The procedure favored by the writer is a two-stage operation performed through an incision in the submammary fold to minimize visible scarring. The nipple and areola are transposed through a button-hole incision made in the skin; the excess fat, skin and glandular tissue are removed (in the fatty hypertrophies): and the gland is securely affixed to the chest wall to prevent recurrence. The operation is done in two stages to avoid necrosis of the nipple. Fine modeling of the reconstructed organ is postponed until the completion of the essential reparative measures. There are no functional contra-indications to this type of surgery since lactation rarely occurs in extreme mammary hypertrophy. Where

function exists, every precaution is taken to preserve it.

SENILE MALFORMATIONS.—Premature atrophy of the breasts is but one manifestation of the untimely senescence which has proven an unwelcome concomitant of modern civilization and brands men and women with the stigmata of old age at a period when their faculties are at their height and their participation in the diverse social and economic activities of life should be at its fullest.

Women suffer more keenly than men from the visible manifestations of senescence for they rely more on the esthetic factor for the achievement of their objectives. It is sad at forty-five and fifty when the vital impulses are still running high to be relegated to the background by the stigmata of age. At thirty and forty it is nothing short of tragedy.

Face.—The skin is the barometer of the aging process. As its fibrous elements lose their elasticity and the subcutaneous fat disappears, it wrinkles and sags and falls in folds and pouches about the facial cavities and skeletal angles.

Plastic surgery successfully effaces the visible symbols of senility from the face and neck. Wrinkles and folds are obliterated by excision of the redundant skin after wide undermining. Incisions are concealed in the hair-line, behind the ears, below the orbital border and in the fold beneath the chin, depending on the area repaired. Thorough undermining of the skin and long incisions insure the durability of the improvements effected, in contrast to the impermanence of the results from the inadequate surgery of the "beauty doctor."

Body.—The body, like the face, gives characteristic evidence of senescence. The entire form may become emaciated, with wrinkling and sagging of the skin; or a generalized adiposis may betray the changes taking place in the metabolic and endocrine systems. Surgical reconstruction is indicated only when localized accumulations of fat deform an otherwise normal body, as in the case of fatty hypertrophy of the breasts.

The removal of excessive abdominal fat and skin should be done only in advanced cases. If the adiposis is confined to the lower portion of the abdomen, the incision can be partially concealed by placing it in the supra-pubic fold. When a large apron of fat is distributed over a wide area, long median and horizontal incisions are necessary. Conspicuous prolapse of the abdomen is usually accompanied by hernias which are repaired at the same time.

Flabbiness and wrinkling of the skin of the body, whether from age, rigid dieting or repeated pregnancies, can be corrected in the same way as on the face. The skin must be widely undermined and the excess excised. The cosmetic gain is hardly worth the discomfort and risks of surgery in such cases, however, unless vocational reasons demand exposure of the body.

Ankles.—A distressing deformity however is usually caused by overdevelopment of the muscles as well as the bones. Reconstruction is therefore inadvisable except when the malformation is produced by an excessive accumula-

tion of fat.

COSMETIC QUACKERY.—The safety and effectiveness of authentic plastic procedures are in strong contrast to the futile risks of many of the processes in use in beauty parlors and by untrained cosmeticians. "Rejuvenation" of the skin is attempted by means of powerful caustics that merely remove the horny outer layer of the epidermis, or, if they go deeper, leave conspicuous scars. There is no more vicious cosmetic quackery than the use of paraffin injections to remove wrinkles. Hollows in the skin are temporarily filled out and wrinkles obliterated, but the ultimate deformity is far worse than the ravages of age. With the passage of time the paraffin loses its original character and invades the surrounding tissues, forming hideous tumors and setting up an extensive inflammation of the skin. Surgical interference is necessary to remove the paraffin; but even when this is successfully accomplished, scars remain to bear witness to the dangerous folly of so-called rejuvenating oils.

REQUISITES OF PLASTIC SURGERY.—The universal urge for beauty can and should be satisfied; but plastic repair, like all other surgery, demands perfect asepsis and an expert evaluation of the subject's systemic condition. These requirements can be satisfied only in a first class medical institution. The precaution of hospitalization should not be ignored even in minor cosmetic operations.

More than the orthodox surgical technique is required to make a competent plastic surgeon. Beside a thorough knowledge of the basic surgical sciences, those entering the field of plastic repair should have an understanding and appreciation of the aesthetic principles that govern the visual arts. They must, moreover, possess an insight into the obscure psychological motives that frequently prompt the request for repair. In doubtful cases appraisal of the psychic arguments for and against surgery is often a problem of the first order.

Deformity of whatever degree is almost always accompanied by a corresponding emotional instability. In normal types this is controlled and kept within reasonable limits. In neurotics the sense of disfigurement may become a deep-seated obsession, driving the sufferer on a fantastic quest for relief which frequently ends in suicide or some other tragic dénouement.

SURGICAL INDICATIONS.—While it is impossible to lay down hard and fast rules, in general it may be said that any striking malformation calls for surgical intervention. Conversely, a flaw that is not noticeable to others does not warrant repair, no matter how seriously it disturbs the peace of mind of its possessor. To a great extent, the likelihood of a psychic recovery after surgery is in direct proportion to the reasonableness of the subjective reaction to the deformity.

Evaluation of the indications for surgery is most difficult when the abnormality for which relief is sought is indeed perceptible but of moderate degree. Many factors influence the decision to operate in such cases—notably the extent to which the blemish handicaps its possessor in the diverse competitions of life. A trifling recession of the chin is a serious impediment to a movie actor but no hindrance at all to a shipping clerk. Similarly a slightly over-developed nose may injure the social opportunities of a young girl whereas it should have no influence on the destiny of an elderly cook.

The importance of the stigmata of age must be analyzed in the same way. A housewife of forty or fifty can hold her own—and even pass as a handsome woman—in spite of a few wrinkles on her face or neck. To an actress of the same age or to a woman of thirty or thirty-five who has aged prematurely under the stress of economic competition, those same lines may spell the end of professional activity. In many spheres, success is bound up with the esthetic factor in appearance.

It is not to be imagined that the de-

sire for plastic repair is confined to women. Under the pressure of psychic, social and economic forces men suffer as acutely as women from flaws in their appearance and are no less willing to submit to a certain amount of pain, risk and expense in order to approximate the esthetic ideal. This instinct has been present in all races at all times. The twentieth century has heightened it because the ruthless competition of our times sets a premium on youth and beauty. Performed by experts and under suitable conditions of safety, modern plastic surgery opens the door to happiness and success to many whom deformity would previously have condemned to social and economic limbo.

J. W. M.

ETHICS, SEXUAL.

1. ABORTION.
2. ALIMONY.
3. BREACH OF PROMISE.
4. CHASTITY AS A VIRTUE.
5. DIVORCE.
6. DOMESTIC TRIO: MÉNAGE À TROIS.
7. DOUBLE STANDARD.
8. EXTRA-MARITAL RELATIONS.
9. HOMOSEXUALITY.
10. ILLICIT RELATIONS.
11. ILLEGITIMACY.
12. INCEST.
13. MASTURBATION.
14. PORNOGRAPHY.
15. PREVENCEPTION OR BIRTH CONTROL.
16. PROMISCUITY.
17. PROSTITUTION.
18. RAPE.
19. SEDUCTION.
20. SEXUAL FAVORS IN UNREQUITED LOVE.
21. SEXUAL INTERCOURSE WITHOUT LOVE.
22. UNNATURAL POSITIONS AND METHODS.

Before discussing the various manifestations of the sex instinct, before deciding on the morality or immorality of separate sexual acts or relationships, it is necessary to lay down the fundamental principles which would guide my judgments, to explain the criteria which determine my approval or condemnation.

The basic principles underlying this writer's code of ethics are really very simple, so simple and free from ambiguity and equivocalness that it is impossible to misinterpret them.

Those basic principles, which I have

always maintained and defended, are as follows:

1. No act or human relationship is in itself either moral or immoral; it is the intention of the actor and the effects of the act which determine the morality and immorality of the actor and the act.

2. An act or relationship which is beneficial to one or more persons, without injuring others, is moral. An act which is injurious to one or more persons is immoral. An act which is neither beneficial nor injurious is an indifferent act, it is amoral. An act which benefits some persons and injures others may be both moral and immoral at the same time, and its classification as moral or immoral will depend upon the balance of the benefit over the injury or vice versa. With the above criterion we are able to judge the morality or immorality of any person or act anywhere; for I maintain that the *basic* principle of morality is the same everywhere and always has been the same.

3. Morality is a human quality, like love and pity. And I do not believe in abstract, ethereal morality, in morality in the desert, or on the globe without any human beings on it. Morality enters into the question only when we deal with the relationship of one human being to another. Morality does not exist apart from human beings, from *at least* two human beings.

4. Having stated that by the criterion presented in my basic principles we can determine the morality or immorality of any act or relationship, it follows that we have no need of any *special* code of sexual morality. Our general moral code will suffice to solve all sexual problems. What is moral in general morality is moral in sexual morality, what is immoral generally is immoral sexually.

5. The sexual relationship of two or several sane adult persons is their affair solely and exclusively. The State has a right to interfere only when the union has resulted in children and these chil-

dren are not properly cared for. With this sole proviso, it is a remnant of savagery and of theocratic domination for the State to attempt to control people in the matter of the expression of their personal instincts.

* * * * *

Abortion.—Abortion, or the interruption of pregnancy before the fetus is viable, except when performed in order to save the mother's life, is considered a crime in all civilized countries, except Soviet Russia. Abortion is not a desirable thing; it does mean the destruction of a commencing life; and one does not admire the woman who looks upon the thing lightly and who instead of using pre-ventives, which she may find distasteful or troublesome, prefers to go to the accommodating physician every month or two to have her uterus emptied. I consider abortion an evil, and I feel confident that the time will come when abortions will become unnecessary, or recourse will be had to them but very rarely. But it must be recognized that under our present conditions, there are cases when the induction of an abortion is not only morally permissible, but becomes a *humane duty*.

When a woman is in labor and we see that she cannot possibly give birth to the child without risk to her life, the law gives us the right to destroy the child; when a woman, married or unmarried, who has tuberculosis, heart disease or kidney disease becomes pregnant and we find that the pregnancy is aggravating her condition, the law gives us the right to induce an abortion; it is then called a *therapeutic abortion* and is considered a perfectly proper, perfectly legitimate procedure.

But when a girl has, through some unwise step, through some misadventure, become pregnant and she comes to the physician begging him to interrupt the pregnancy and save her from the ostracism and the shame, threatening that otherwise she will commit suicide, the physician—well knowing the girl and knowing that she will put the threat into execution—nevertheless shows her the door, because “to induce an abortion is a crime against God,” or because he is afraid of the possible results.

The refusal of decent and competent physicians to induce abortion even when the girl's or woman's condition has been

most pitifully desperate has had disastrous results. It has driven many an unfortunate to a suicide's grave, or to marriage with a man whom she despised, but whom she married only to escape the disgrace of illegitimate motherhood, or it has forced her into the hands of an incompetent quack where she paid with her life or chronic invalidism for the stupidity and cruelty of an antiquated law.

A time will come when motherhood out of wedlock will not be considered the disgrace that it is now; a time will come when the access to prevenceptive information will be universal; at that time recourse to abortion will be of rare occurrence. But in the meantime we must legalize it. Abortion up to the end of the third month should be made quite legal when performed by a physician and at the request of the woman. Our motto should be: Let abortion be made unnecessary, superfluous, but in the meantime it should be made legal.

Alimony.—Alimony is a monetary allowance which the husband has to pay, by order of court, to his wife or ex-wife after her divorce or legal separation from him.

What is the ethics of alimony? It is somewhat degrading for a woman to accept monthly or annual payments or one lump sum from a man whom she divorced or who divorced her. And in the future, when woman will be truly economically as independent as man, alimony will be a thing unheard of. The word itself will become obsolete. But at the present time when the woman is not economically independent and when she is perhaps middle-aged or past middle age and stands little or no chance to secure another husband I can see nothing immoral or degrading in the payment and in the acceptance of alimony.

Of course if the husband has nothing, the wife will get nothing, and if she is economically independent, she should receive nothing whether the husband is rich or not. When she married it was definitely understood that the arrangement was a permanent one, for life. Therefore if living together for whatever rea-

son has become impossible, it is nothing but right that the husband should pay a reasonable amount for the support of the wife. But the excessive amounts of alimony which some courts adjudge are scandalous and should be protested against.

Breach of Promise.—Breach of promise simply means the failure to fulfill a promise; but usually it is understood to mean the failure on a man's part to marry a girl or woman whom he had promised to marry.

Should suits for breach of promise be allowable? In the future, suing a man for breach of promise will sound as ridiculous as a man suing a girl for breach of promise sounds now. (Though there have been a few such cases.) The law will not recognize it, and there will be no such thing. There ought to be no such thing now, but there is some justification for it. The young woman has lost time—a year, or two or more; there are cases where men were engaged for *ten* years and then broke off—her chances of securing another fiancé are decidedly less, for many men have a prejudice against a girl who has been jilted, in some cases the intimacy had reached the stage of partial or complete sexual relations, in short, the girl's value as a prospective bride is decidedly lessened, and she considers herself *morally justified* in demanding compensation.

There is another reason why suing for breach of promise has a definite justification. The conscienceless sadistic seducer is not yet quite extinct. And the only way he succeeds or could succeed with some girls is by engaging himself to them, by making a definite promise of marriage. Only under such conditions do some girls consider themselves morally justified in yielding. And the only thing that holds the professional seducer back in some cases from definitely promising marriage is the fear of a breach of promise suit. Were there no such thing as suing for breach of promise of marriage, the Don Juan would have no hesitation in promising marriage to any pretty girl that would take his fancy, and to whom he would appeal, seducing and then abandoning her. As it is, there is some restraint to his dishonest activities.

Of course, a refined and high-spirited girl will recoil from the idea of a monetary compensation and from the publicity attendant upon a trial for a breach of promise; but not

all girls are refined and high-spirited, and one can not say that there is no justice or equity on their side. I should say that each case ought to be decided on its merits by a special commission, and behind closed doors. But breach of promise suits on the part of women who are really low-grade prostitutes, professional, ~~and~~ ^{are} thrown out of court, no matter how "clear" the case may be. We must bear in mind that just as there are men vampires so there are vampires of the female species.

Chastity as a Virtue.—It would be a mistake to think, as some freethinkers do, that only in Christian countries is chastity considered a virtue and unchastity a vice. Among some savage and primitive races unchastity was surrounded with innumerable taboos and was punished more cruelly than it ever was by any Christian nation.

The question is: Is chastity a virtue? And is it generally to be praised, fostered and encouraged? The question can not be answered laconically either in the affirmative or negative. Chastity under certain circumstances is advisable for hygienic, for self-disciplining reasons, it may be temporarily useful in helping us to sublimate our libido sexualis—because within certain limits the sex instinct *may* be sublimated—but that does not render it an outstanding virtue, and does not make unchastity a vice.

A virtue is a positive quality which benefits the individual, his friends and neighbors, the nation or the race as a whole. Kindness is a virtue. Sympathy, pity is a virtue. Courage in fighting for freedom, for the oppressed and downtrodden, is a virtue. Charity is a virtue. All those qualities are pro-social in character, they benefit single individuals, they benefit the race. But whom does unswerving chastity benefit? Certainly not the chaste one, man or woman, nor anybody else. I therefore cannot class chastity among the positive virtues.

Divorce.—My attitude towards divorce is a very simple one: When the people, both of them, have decided that they do not wish to continue to live together, they should be divorced without further ado. Perhaps the decree should be made final three or six months after the application for divorce, but this is

a detail.

Where only one party demands a divorce, the other party resisting, the case should be submitted to a mutually agreed upon arbitrator or arbitration committee, which would listen to testimony in private; there would be but a nominal expense and no publicity, and of course infidelity would not be the only ground as it now is in so many States. Incompatibility of temperaments would be an all-sufficient ground. In most cases, however, and speaking generally, divorce would be grantable at the application of even one party.

Where there are children, the situation is more complicated. It is true that children do not thrive very well with divorced parents, but children do not thrive very well either when the parents hate each other, when there are daily squabbles and fights, accusations and recriminations.

It is a question whether the children would not get along better living with one of the parents than under a roof where a continual war, open or silent, is going on. Of course the children must be taken care of. The State must see to it that they do not suffer more than in the nature of things is absolutely unavoidable. Children are the State's most precious possession, they must be protected, they must be guarded above everything else. But the children being properly taken care of by one or both of the parents, no additional obstacles should be put in the way of granting a divorce.

Divorce immoral? The forcing of people to live together who can not stand each other is immoral and anti-social. The easy granting of divorce is moral and pro-social; it benefits the individuals and the race.

Domestic Trio: Ménage à Trois.—May a woman live openly with two husbands or a man with two wives? The case is well known of Mr. X, a prominent radical, who is quite willing to share his wife with a friend. They live all three in the same house, and except for the fact that she is married legally to only one of the men, both men may be considered her husbands. There is no jealousy, and all three are satisfied.

Their friends were deeply shocked at first, many of them cut them; gradually some came back, others stayed away permanently. It is their luck that they are in a metropolis and are not dependent economically upon any boss or superior. Were they in a small town, life would be made impossible for them; they would be driven from the place. If there is anybody whom the small-towner considers utterly beneath contempt, as standing at the lowest rung of the ladder of moral degradation, it is the man who knows that his wife "betrays" him, knows with whom she betrays him, and still does nothing in the matter; seems to acquiesce. He is considered either the most venal, or the most cowardly of men. And even most of Mr. X's radical and intelligent friends looked upon him with ill-concealed contempt.

I cannot see that Mr. X deserved any contempt. It is merely the unusualness of the situation that caused the people to be shocked. And basing myself upon the criteria of morality of our Code, I cannot see that either Mr. X, Mrs. X or the friend and lover can be morally condemned, reprimanded or despised. Whose affair was it except the affair of the three people concerned? And if the three people concerned were perfectly satisfied with the arrangement, were made happier thereby, why the moral indignation?

Mrs. X was perfectly capable of satisfying sexually and emotionally both her husband and her lover, she loved both about equally well, and she was unwilling to part from either. The solution suggested by her was the best solution out of a difficult situation which threatened to become a catastrophe; the new situation was not merely acquiesced in by both men, but was soon seen to be the most sensible, the most humane was in fact the only solution possible. And in the future, civilized, emancipated human beings, emancipated not only in words but in their souls, will see nothing morally wrong, nothing whatever, in one woman living with two men or in one man living with two women.

It is the wrong idea responsible for so much pernicious mischief that a man can love one woman only, and vice versa, that makes us see something immoral in a man living with or loving more than one woman and in a woman living with and loving more than one man.

And why claim to be so shocked? After all, polygamy—polygyny and polyandry—was not an altogether unknown phenomenon, and even now polygyny is still practiced in some places. And the Mormons were not primitive savages. And we can see nothing shocking, nothing immoral in a *ménage à trois*.

Double Standard.—"Do you claim there should be absolutely the same standard for women as for men?" Abstractly, theoretically, yes: One standard. Abstractly, theoretically, there is no room for a double standard in sex morality as there is no room for a double standard in general morality. Whatever is permitted to a man should be permitted to a woman. But *practically*, no. And for the woman's own sake. The general attitude the world over is still much more opposed to sex freedom in women than to the same freedom in men, and but few women are strong enough to go against the general current without exhausting their energy, without being crushed or battered by it.

Then there is the biological difference; men do not become pregnant, and women do; and sex indulgence can not have the same consequences for men that it has for women; and in the case of married people, the man indulging extra-maritally does not bring somebody else's baby home, while the wife may in spite of preventives; and it—the baby—may be of much inferior stock. You will admit that there is a reason for not punishing a woman who seduces a young boy as severely—if at all—as we punish a man who seduces or rapes a young woman. For all these reasons, there is a justification for the double standard. But if a woman, after having considered all the pros and cons, is determined to enter upon a life of full sexual freedom, it is her right and privilege to do so; and she is no more immoral in doing so than a man is in similar circumstances.

Extra-marital Relations.—Extra-marital relations are on a different level from illicit relations between non-married people. While there are but few rational moralists of the present day

who consider illicit relations between single people, entered into openly and willingly, with a full consideration of the possible consequences, as morally reprehensible, there is still a considerable number of free-thinking men and women who regard extra-marital relations as ethically indefensible. Such relations do stand on a different plane from relations between the single.

In indulging in extra-marital relations, the man or the wife breaks an openly expressed or tacitly understood vow or promise; and the psychic suffering of one of the partners is a much more likely probability than is the case with two single people. And yet I will find it is not at all difficult to demonstrate that there are cases in which extra-marital indulgence would have to be condoned by the most rigid of moralists—rational moralists, of course.

Of the numerous examples I could present, let me give one: Mr. and Mrs. A. have been married eight years. It was a case of mutual love and they love each other now, though there are times of tension and of strained relations. Very soon after the marriage they both discovered that Mrs. A. did not care for the sex act. Not only was she indifferent to it, but it was objectionable to her. To satisfy the demands of Mr. A. she submitted occasionally, but with ill-concealed reluctance. After the first child, her objection to the sex act became intensified and her reluctance to yield to the sexual embrace more open. Mr. A. knew that she did not participate in the act, that it was obnoxious to her, and his satisfaction in the act became gradually more and more impaired. After the third child she practically refused to have any further sexual relations. He was a robust, virile, active man; he was now at the acme of his manhood, and his nature demanded an indulgence of twice or at least once a week. If he abstained longer he suffered, both physically and mentally; he was unable to do his work properly; the nocturnal emissions would not relieve him; on the contrary, they would leave him in a more irritable condition, which would make the desire for sexual indulgence more imperative.

What was he to do? Abstain and injure his health, impair his capacity for work, become morose and irritable with his wife and children? Demand a divorce? But he loved his wife and little family, a divorce would have caused unhappiness to him, to his wife

and to his children, and would have meant another broken home, over which our theologians and conventional moralists are so concerned.

No, he took the sensible, best-for-all concerned, and therefore *moral* way: he began to have extra-marital relations. Whether his wife was aware of it or not is not quite certain. Mr. A. suspects she was. But one thing is certain, the household was a happier household than it had been before: and according to our principle that any act or relationship which is beneficial to two or more people without causing injury to anybody is a moral act, Mr. A.'s extra-marital relations must be considered a moral act.

Again, the wife may become affected with a disease which would jeopardize her life if she indulged in sex relations. Shall the husband who loves his wife spend the rest of his life as a celibate?

Or the wife may become enormously fat, untidy and generally objectionable physically. Still there are children, a divorce or separation would destroy the home and would break the wife's heart—taking all circumstances into consideration the husband thinks it more moral on his part to continue to live under the same roof, but get his emotional and sexual satisfaction outside.

Many examples could be given showing that in some cases extra-marital relations are the lesser of two evils.

Common sense would say that a man who for whatever reason finds it impossible to continue to live with his wife or a wife who for whatever reason finds it impossible to continue to live with her husband should have no great difficulty in obtaining a divorce; they would not then be obliged to have recourse to extra-marital relations; but common sense is not the ruling power in most countries, and it is the State with its unintelligent laws and antiquated legal machinery that is responsible for a great deal of the illicit and extra-matrimonial relationships that exist, as it is responsible for much of the prostitution and crime that cast such sombre shadows on our social life.

In many cases we can find a definite justification, physical or spiritual for extra-marital relations. But there are cases when without any special ascertainable reason, except the fundamental reason that strict monogamy is not suited to every human male, the man

tired of his wife. She no longer satisfies him. She may or she may not bore him. She may have become less attractive sexually, or she may be as attractive as she was during the first year of their married life; or she may even be more attractive. There is many a woman who is more attractive at thirty-five than at twenty-five and men may find them most charming and attractive. And yet the husband may have lost or be losing interest in her. He may have a strong, irresistible yearning for another woman; not any special woman, but just another woman. I do not see why in such cases the man is not justified in having extra-marital relations if he can do so without causing his wife any suffering. And it may be stated here, what I have maintained for many years, that such occasional extra-marital relations, instead of further loosening, may tighten and strengthen the marital bond.

Homosexuality.—Homosexuality is no crime, no sin. It is a misfortune. It is a natural abnormality for which the homosexual is no more responsible than the heterosexual is for his heterosexuality, than he is responsible for his stature or the color of his hair. Those who live in homosexual relations hurt no third person, do no injury to the State.

It is better they should be permitted to live and associate among themselves unmolested than that they should be hounded, deprived of the society of their friends, and perhaps be induced to marry and transmit their abnormality to the progeny. For, unfortunately, though the homosexual man has the soul of a woman and the homosexual woman the soul of a man, physiologically they are what they are anatomically, and the homosexual man can beget like a normal man, and the homosexual woman can conceive and bear children like a normal woman.

From every point of view, from the points of view of justice, expedience and decency, it is important that the homosexual should not be prosecuted or molested.

All we have a right to demand is that he should not flaunt his homosexuality publicly. For while genuine homosexuality is an inborn trait, its public exhibition may lead to per-

versity, to so-called pseudo-homosexuality. And of course any attempt at "minors or adolescents for homosexual or pederastic practices should be punished severely—as we punish the seduction of female children and minor girls for the purpose of heterosexual relations. Minors of either sex who can neither protect themselves nor have sufficient knowledge or reasoning power to understand what they are doing should be protected by society. Hence pederasty is on quite a different plane from homosexual relations among adults; it is an immoral practice and should remain punishable.

Illicit Relations.—Some of the opinions expressed by the writer of these lines are not susceptible to argumentation, for they are based on one's entire outlook, one's *Weltanschauung*, one's religious and moral code. If a person, either on religious or on moral grounds, believes that illicit sexual relations are criminal, sinful or morally reprehensible, then there is nothing to argue about; nor is it of any great importance to try to convert him to a different point of view. Some very excellent men hold those views, and it does not interfere with their engaging in useful, meritorious, creative and humanitarian work. I myself once held such views, but my attitude towards voluntary so-called illicit sex relations has undergone a change.

If I take and apply my criteria for determining the morality and immorality of acts and relationships, I must reach the conclusion that there is *nothing* immoral in illicit relationships; and where such a relationship is distinctly beneficial to two people, then it is not only not immoral, but is distinctly moral and commendable.

The writer could present numerous unimpeachable cases which would corroborate his thesis that illicit sex relations between two unmarried people were conducive to mutual happiness or at least satisfaction and well-being, without causing any injury to any third person or to society, but we shall limit ourself to laying down the following proposition:

There is nothing morally wrong in illicit sex relations, in themselves;

where they are entered into voluntarily and freely and contribute to the physical, emotional and mental well-being of two people, they are to be considered as socially beneficial and therefore moral; illicit relations become immoral and anti-social when they are effected by force, misrepresentation, deception, or false promises. And in this respect they do not differ from any non-sexual act that is effected by force, misrepresentation, deception or false promises.

Illegitimacy.—There are no illegitimate mothers as there are no illegitimate children; all mothers and all children are legitimate. Many years ago I stated that the very word "illegitimate" as applied to motherhood or childhood would disappear from the vocabulary, the same as the word "illicit" as applied to sex relations, and several other words bequeathed to us by a superstitious past. In the future no distinction will be made between married and unmarried mothers, and children born out of wedlock will be treated exactly like children born in wedlock, as is the case in at least one great country now.

At the present, however, so-called illegitimate children labor under certain disadvantages, and I am therefore not quite sure that I could give my full moral sanction to mothers who wish to bring "illegitimate" children into the world. The mother may wish to defy society, and may even glory in the disadvantages, the handicaps and the martyrdom of an illegitimate union, or illegitimate motherhood. I do not see that she has the right to bring a child into the world which will labor under handicaps. I have always been opposed to vicarious martyrdom, and no mother can know how her child will grow up. Perhaps it will grow up a weakling. Perhaps the child will grow up conservatively and will come to despise the mother who brought him or her into the world "under a cloud."

Incest.—Incest (Latin: *Incestum*, from *in*, no; *castus*; pure, chaste) or sexual intercourse between very near relatives, between persons so nearly related that they could not contract legal marriage, is anti-social and therefore immoral. It is anti-social because too close inbreeding, unless every defective

or potentially defective individual is rigorously excluded, which can not very well be done, leads or may lead to the degeneration of the offspring. And to bring forth children from incestuous relations, being anti-social and immoral, would properly be a punishable offense. But barring this eventuality, and except where minors and dependents are concerned, I do not see that it is the State's province to interfere. Incest, with the two exceptions noted above, belongs to the domain of the moralist and the sexologist; they can do some good; the State can do only harm. And as a matter of fact, the people feel it to be so, and cover the catastrophe with a mantle of secrecy and silence.

People indulging in incestuous relations are branded as degenerates, as people of the lowest degree of immorality, as abnormal criminals. I have not personally met cases of father-daughter or mother-son incest, though I have known of such cases; but I have met personally several cases of brother-sister incest. And when they grew up, they behaved in a normal manner: the men became respectable citizens, law-abiding professional men, solid fathers of families, and the women were as good wives and mothers as if nothing had happened to them in their adolescence. Nobody would have accused the men or the women of any degeneracy or abnormality.

As to the alleged *innate* horror of incest, of the inborn disgust, loathing at the very thought of it, there is no such thing. The innate horror of incest is purely mythical, apocryphal. A very large number of men, much larger than one imagines, are in love with their sisters and vice versa and if they abstain from sexual relations, it is not because of an innate disgust, but because of their religious, social and moral bringing up. A great number of fathers are deeply *in love* with their daughters and vice versa. And it is only religion, tradition and our moral code that keeps them apart, prevents their physical intimacy.

Masturbation.—Little need be said about the ethics or morality of masturbation. We may consider it a disagreeable or foolish habit, an injurious

practice, but there is certainly nothing vicious or immoral about it. At the worst one may put it on a par with smoking or drinking. But even to this comparison many would object. For there is a growing body of medical opinion that masturbation, as it is usually practised, is not at all injurious. When we see feeble-mindedness as a concomitant of excessive masturbation, the latter may be said not to be the cause of the former, but the result of it. At any rate, it is only in the sense that any practice that weakens a man and makes him less useful to himself and to the community is immoral, that we can consider masturbation immoral. But where masturbation is harmless or even, as it not infrequently happens, beneficial to the individual, there it is ridiculous to speak of it as immoral. In the first case it is an indifferent act, neither moral nor immoral; in the second case—where it benefits the individual—we have a right to call it a moral practice.

Pornography.—Pornography (in Greek *Porné*, prostitute) is the expression by word or image of lewd, lascivious, obscene thoughts or acts. Pornography is in the writer's opinion anti-social and therefore immoral. It is difficult for me to understand the quality of mind that loves to revel in pornographic stories, that enjoys luxuriating in obscene pictures. But there is no question that there are such men and women, who derive intense pleasure from what we call lewd, lascivious, pornographic literature, in word and image. If adult men and women wish to feed on pornography, let them.

But are there such writings and pictures as to the pornographic character of which there is not the slightest doubt? Are there books and pictures so utterly rotten that universal agreement may prevail as to their rottenness? Of course there are, and only hypocrisy—but hypocrisy at the other extreme—would attempt to deny it. For instance, there may be two opinions as to the pornographic character of photographs of perfectly nude beautiful women in seductive poses. While undoubtedly likely to stimulate sexual desire and to en-

gender "lewd and lascivious" thoughts, they may still be excused by some because of their artistic beauty. But can there be two opinions as to the meretricious, vulgarly pornographic character of photographs and drawings depicting coitus in unnatural positions, various sexual perversions, coitus between male and female homosexuals, and even bestiality? What excuse can there be found for those? Is there any other reason for them than the desire of corrupt men to make money?

My attitude towards pornography and obscenity is therefore as follows:

1. There are such things as unqualifiedly vile, obscene, pornographic writings and pictures manufactured for the sole purpose of exciting the sexual appetite; the motive for their production is the meretricious one of making money. There is no other purpose in them.

2. I cannot understand how normal people, living a normal, non-repressed sex life, can care for such things; to me they seem vile and disgusting. But if there are people who want those things, who clamor for them, let them have them.

3. But this must be a *sine qua non*: That obscene material, in word or picture, must not flaunt itself, must not be exhibited publicly on stands and in show windows, and must be very carefully guarded from falling into the hands of boys and girls. The man who tries deliberately to put pornographic matter into the hands of children and adolescents, should be treated like any other criminal guilty of an anti-social act; he should be punished, though not perhaps quite so severely, as we punish the man who tries to sell morphine or cocaine to children and adolescents. I consider the deliberate premature stimulation and excitation of sexual desire a crime, and it should be punished as such. As I have written long ago: The sex instinct, alas, awakens early enough, without extraneous irritants; it is therefore most vicious to attempt to awaken it, to stimulate it, to whip it into abnormal activity prematurely.

Prevention or Birth Control.—Is Prevention or the use of preventive

measures in order to limit the number of one's children moral or immoral? Alas! that at this time in our history this question should still be seriously asked and discussed! But we shall answer it very briefly: Not only is the use of prevenience for the limitation of one's offspring moral, but it is a high duty, and it is the unlimited, uncontrolled breeding that is highly immoral.

Promiscuity.—Many men and women who have advanced so far in their sexual code of ethics that they regard illicit relationships between a man and a woman, namely, one man and one woman, as perfectly moral, still look askance and brand as immoral any relationship which has come to be called promiscuous; a man having relations with a number of women successively or more or less simultaneously, or a woman in similar relations to several men, is looked at with contempt and is branded with an uncomplimentary epithet.

In my opinion it is not so much the *number* as the *quality* of the relationships that is of importance. A man may be dishonest and contemptible and therefore immoral in his relation to a single woman; he may remain technically faithful to that one woman and yet he may have succeeded in gaining the relationship to that woman by deceit and chicanery; while a man may entertain relationships with a number of women, but if those relationships have been entered into frankly, freely, without false promises, with open eyes and a full knowledge of the facts on each side, then they cannot be characterized as immoral.

Having reached the conclusion that illicit relations are not immoral *per se*, the number of men or women with whom they are entertained does not change my conclusion. Just as to the religionist illicit relations with one woman is just as sinful as with several, so to the rational moralist illicit relations are not essentially more reprehensible with several partners than with one.

There is one difference, however, between more or less monogamous and promiscuous illicit relationships. The former may be, often is, the result of true love; where it is not, a chance is given for love to develop, to become deeply rooted; where no deep love has bloomed, affection often finds a place, and affection is often stronger and more permanent than love. In promiscuous relationships there is no love to start with, and love can have no chance to develop. That is what makes promiscuous relationships inferior to monogamous, more or less permanent, even though illicit unions, and that is why promiscuous men and women are justly looked down upon. Generally speaking, they are not fine people. They often mistake lust for love.

Prostitution.—According to the criteria laid down by this writer, prostitution is not immoral, and that it answers a genuine, important, imperative need, about that there can be no question.

A twofold odium has been resting on prostitution, the *odium theologicum* and the *odium hygienicum*. Whether and how soon the theologic odium will be lifted we do not know; but it seems to us that the hygienic odium is in the way of disappearing. The horror with which prostitution inspires a great part of humanity is due mainly to the fact that for centuries it has been the principal focus of venereal infection. That condition is becoming rapidly ameliorated; with the general elevation in the sanitary standards and the ideas of cleanliness among the people, and the more and more widespread use of venereal prophylactics, as well as the great improvement we have accomplished in the cure of the venereal diseases, the latter are becoming less and less frequent among prostitutes, and it is not too far-fetched or too optimistic to express the hope that in several more decades prostitutes will be practically as free from venereal disease and as safe as far as infection is concerned as the general population. If prostitution were perfectly safe, that is, free from all danger of venereal infection, a good deal of the odium which attaches to it would disappear even in the minds of those who condemn it as they believe on moral grounds exclusively.

But the question may be asked: Does prostitution supply a genuine need? I must reply that, at the present time, prostitution answers a real need, and the attempt to suppress it is as vicious as it is futile. When apparently suppressed, it merely assumes a different form, and when driven from one place it finds refuge in another. It fills a definite want, because millions of men can not get married at the age when their sexual function is at its highest, and because many can not find a mate to live with in free relationship. And to demand that normal men live a life of complete abstinence up to the age of thirty, thirty-five or forty, is to be guilty either of complete ignorance of physiology, or of—hypocrisy. Thus, at the present time, the oldest profession in the world still supplies a genuine need.

The question is often asked: What to do with the prostitute? To that question I would answer: Leave her alone. Consider prostitution a legitimate occupation subject to certain regulations and restrictions, as many other legitimate occupations are subject, cease to persecute and to prosecute her. Let her know that if she abides by certain rules, she has nothing and nobody to fear, and she will gain in self-respect, will become more prosocial, will take still greater care than she does now not to become infected, and it will be *easier* for her to leave her profession. The more brutally the prostitute is treated, the more difficult it is for her to change her mode of life, if she should make up her mind to do so. And vice versa. It may seem paradoxical, but it is so.

I have stated that according to my criteria, prostitution is neither criminal nor immoral. But it goes without saying that this refers to prostitution practiced freely, voluntarily, willingly. There must not be the slightest coercion, the faintest pressure applied, no matter from what source. Any force, physical, financial, moral, is criminal to the utmost degree, and should be punished accordingly. The white slaver if he still exists should be punished with the utmost severity, like the contemptible criminal that he is.

Rape.—Rape (Latin *raptus*, from *rapiō*, I seize) may be defined as sexual intercourse against a person's will; having intercourse with a woman by force. Rape is a violation of, an attack on a

person's body. It is an anti-social, and therefore immoral act; the world over, it is considered a serious, justly penalized crime, and always will be so considered.

I wish to say, however, that the punishment meted out for rape in some countries and in some of our States savors of savagery; the sentences are too ferocious; to punish rape with death as is done in some of our States is an indication of sadism and not of justice or common sense. Rape should be treated more or less like assault and battery, and all the circumstances surrounding the case should be taken into consideration; in other words, each case should be decided on its own merits. In this instance, the age of the victim is considered an important factor.

When the human sex relation will be divested of the savage notions, the medieval mysticism, the physiologic and psychologic misinformation that still attach to it now, when a woman who has had sexual experience, whether by force or voluntarily, will not be considered "ruined," degraded and deserving of deep commiseration or contempt, then the punishments for rape, while still meted out, will be more sensible, more appropriate to the crime.

It is very important to bear in mind that accusations of rape should be accepted with extreme caution. There are too many hysterical accusations, there are too many accusations made for the purpose of blackmail. It is extremely difficult—some say impossible—to commit rape on a healthy adult woman, unless she is chloroformed or knocked senseless. Some claim that it is impossible to commit rape on a woman who really does not want to be raped. Very often the woman consciously or subconsciously helps the man to realize his design. There are many cases where the woman submitted semi-reluctantly and then, regretting what she did, and angry at the man because he persuaded her, suddenly decided to bring the accusation of rape against him. And many innocent men are agonizing in prisons and expiating a crime that they never committed.

Even little girls have been known to be most cunning and depraved liars in making up wholly false accusations against men. Therefore judges, prosecutors and juries should be extremely cautious in cases of accusations of rape.

Seduction.—Seduction is the act of enticing or inducing a girl by false statements, by dishonest promises, to surrender her chastity. The character of the man who seduces young women under false promises brands him in my

eyes as one of the lowest criminals. Seduction is, in my opinion, often a greater crime as well as more evil in its consequences than rape. In rape the girl's body alone is injured; in seduction both the body and psyche are deceived and outraged.

Sexual Favors in Unrequited Love.—

Where there is mutual love there can be no question of sexual favors. Both are equally happy in the sexual embrace. We speak of sexual favors only when one of the parties—the woman usually—is not in love, but grants the embrace as a favor.

It seems to me that in a future age, when love will be divested of its false, artificial glamour, when it will be stripped of its mysticism, its primitive taboos and its prehistoric exclusiveness, when it will be put in its right place and looked at frankly and sanely, the granting of sexual favors will be regarded in about the same light as the granting of any other favors. And if we admit that there is nothing immoral in the sex embrace *per se*, if we admit that the sexual relations of adult people are their affair only, then why not?

I can not look without disapproval on present day conduct in cases of unrequited love. I will take the case where the man is deeply in love or infatuated with a woman, but his love is unreciprocated. Now, the man may suffer the worst agonies, he may become a physical and mental wreck, everybody may know for a certainty that he is going to lose his reason or to commit suicide, and yet no reproach attaches to the woman if she refuses to lift a finger to save him from that fate.

According to the rational moral code, which is superior to and more humane than the traditional code, the conduct of such a woman would not be stamped as morally reprehensible. The granting of occasional sexual favors in order to save a man's reason and life will not be considered in the future, as by some it is not considered at the present, an immoral, shocking or bizarre and grotesque proposition. The "hard-hearted" woman's conduct will be considered pardonable only in case she

should be so deeply in love with somebody else that the touch of another man was objectionable to her, or if that other man should be physically repellent to her. Otherwise, the haughty, chastity-proud, icily virginal woman will not be prized and respected as highly as she is now.

Somebody may interpolate here: No self-respecting man would accept any sexual favors from a woman out of pity; no real man would care to have any relations with a woman who, he knew, did not love him. Unfortunately, it is not so. And we need not go to novels to find men who were most happy to accept sexual favors from a woman as a beggar accepts alms. It may not be ideal, it may not be conventional, it may not be respectable, but there is nothing immoral in it.

Sexual Intercourse Without Love.—Is sexual intercourse, as a purely physical act, not connected with love, immoral? Some people have emancipated themselves sufficiently from theologic dogmas to hold that there is nothing immoral or anti-social in so-called illicit relations, i.e., in sexual relations outside of "lawful" wedlock. But one condition they impose: there must be Love. Sexual intercourse when there is love between the man and the woman is all right, permissible, not immoral. But where there is no love but just physical attraction, it is low, base, immoral; it becomes a vulgar, sensual, "animal" act.

There is no question, of course, and no modern civilized man will dispute it, that when the sex act is accompanied by love, it is of a higher character, more refined and more ecstatic. But what is there to be done when there is no love? Love does not come to everybody. Sex love is to many people impossible without sex desire, but sex desire is quite possible without love. What is a healthy man or woman to do who has a strong sex urge but who has not been fortunate enough to fall in love with anybody or to be loved? For it is a mistake to believe that everybody is capable of love or can inspire love, i.e., be loved in return. There are men and

women who can not fall in love, and there is still a greater number of men and women whom none could possibly love. They have nothing in them to inspire love. Must such men and women go through life without ever having any sexual relations?

A man and woman become acquainted; they like each other well enough physically, but there can be no question of love between them; that supreme gift refuses to descend upon them; in the meantime their sex libido is active, and in both there is a strong urge to contrectation and detumescence. If those two people have sexual relations, which benefit them both physically and mentally, though there is no love in the case, whose affair is it but their own? And why should we brand such a relationship as immoral?

Unnatural Positions and Methods.—There are men who consider every deviation from the normal position of coitus (though it has not always been the normal position) and every variation in the manner of performing the act as sinful and vicious. If there are any objections to variations in positions and methods of coitus, they are of a physiologic, psychologic or esthetic, but surely not of a moral character.

What has morality to do with the matter, when the sex relations of two or more adult people are their affair and their own affair only?

The subject reaches the acme of ludicrous absurdity, when the State tries to interfere and to punish those who wish to indulge in methods which are branded as unnatural. What has the State to do with the most intimate, most private affairs of men and women? And yet a good deal of blackmailing has been attempted in this connection. Members of the Vice Squad have enticed women to indulge in unnatural practices with them and then accused them in order to bring about a severer sentence, and women have accused or have threatened to accuse men of abnormal methods of coitus in order to extort money from them.

It is disgraceful that the State should in any way interfere in such purely private matters. What I say applies to every unnatural method, even to such

practices as fellatio, cunnilingus, etc. Whatever may be thought of these practices—that is a matter of opinion—there is nothing immoral about them. And what I say about unnatural positions and methods applies as well to vagaries and perversions. As long as both partners are satisfied, as long as there is no physical force, and no moral or economic pressure employed, there can be no question of immorality, and no one has any moral right to interfere.

W. J. R.

EUGENICS. Although the name eugenics is relatively new the practice of eugenics is very old. Several of the many regulations laid down in Leviticus for the conduct of life were probably eugenic in effect if not in intent. Marriages within certain degrees of relationship were forbidden as well as marriages with the heathen. But there was much more concern over the preservation of tribal integrity and the observance of religious custom than with racial improvement. The laws of Manu prohibited alliances with persons afflicted with various diseases and defects and even made it unlawful to marry a woman with red hair. Much more definitely and consciously eugenic measures were carried out among the ancient Greeks. One of the earliest of the advocates of eugenic breeding was the Greek poet Theognis (6th century B. C.). In a passage which has been frequently quoted he says:

With kine and horses, Kurnus! we proceed
By reasonable rules, and choose a breed
For profit and increase, at any price,
Of a sound stock, without defect or vice.
But, in the daily matches that we make,
The price is everything: for money's sake,
Men marry: women are in marriage given.
The churl or ruffian, that in wealth has
thriven,
May match his offspring with the proudest
race:
Thus everything is mixed, noble and base!
If, then, in outward manner, form, and
mind,
You find us a degraded, motley kind,
Wonder no more, my friend! the cause is
plain,
And to lament the consequence is vain.

Hippocrates taught, rightly or wrongly, that alcohol exercises a deleterious influence on the progeny, and Diogenes, observing that alcohol sometimes effects the elimination of the sots who use it to excess, drew the somewhat cynical conclusion that alcoholism is a positive benefit to society. The Spartans took race culture, like life in general, very seriously. They had the notion that children are stronger if they are born to parents during their years of greatest vigor, and they decreed that a man should not marry too early or too late in life. According to Plutarch, Lycurgus allowed a man who was advanced in years and had a young wife to recommend some virtuous and approved young man, that she might have a child by him, who might inherit the good qualities of the father, and be a son to himself. Children, according to Lycurgus, are not the property of their parents, but of the state, and they should be begotten by the best men. "The laws of other nations," says Plutarch, "seemed to him very absurd and inconsistent, where people would be so solicitous to pay money for fine breeding, and yet kept their wives shut up, to be made mothers only by themselves, who might be foolish, infirm or diseased; as if it were not apparent that children of a bad breed would prove their bad qualities first upon those who kept and were rearing them, and well born children in like manner, their good qualities."

In Sparta children soon after birth had to be submitted to an official inspector who, if he found them sound and well, would make provision for their upbringing. If an infant had the misfortune to be puny or ill formed it was discreetly disposed of. Nurses followed the custom of bathing the children with wine instead of water on the theory that the weaklings would waste away and die under this heroic treatment and only the vigorous would survive the ordeal. Children received little coddling in ancient Sparta. From infancy on they were inured to hardships and were made

to perform exercises to develop their strength and endurance. The aim of the Spartans was to breed a race of strong, healthy, brave, frugal and virtuous people. Romantic love, and parental affection were not allowed to stand in the way of developing a race of men who would make Sparta respected by her enemies.

Greek writers attributed great importance to the influence of heredity. It was regarded as a sort of fate presiding over the destinies of man. Noble children are born to noble sires and base children to base sires. That a bad child should come from good parents was regarded as an exception to the general rule. "The fairest gift that one can give children," says Heraclitus, "is to be born of noble sires."

The eugenic practices of the Spartans doubtless exercised a considerable influence upon the eugenic theories of the Athenians. By far the most elaborate eugenics scheme ever formulated is that of Plato. The eugenic procedures advocated in his Republic are essentially like those which were actually put into practice in Sparta, but they were even more thoroughgoing and brutal. In the ideal republic it is "proper . . . that the best men embrace for the most part the best women; and the most depraved men, on the contrary, the most depraved women; and the offspring of the former is to be educated but not that of the latter if you desire to have a flock of the most perfect kind, and this must be performed in such a manner as to escape the notice of all but the governors themselves, if you would have the whole herd of the guardians as free from sedition as possible."

Here is where the worthy governors of the Republic are compelled to use a little trickery. When the children are born they are received by the proper custodians, "and when they receive the children of worthy persons, they will carry them, I imagine, to the nursery to certain nurses dwelling apart in a certain place of the city. But the children of the more depraved and such

others as are in any way imperfect they will hide in some secret and obscure place, as is proper."

In Plato's scheme the whole regulation of population both quantitatively and qualitatively is to be in the hands of the governors who should of course be philosophers. "The number of marriages we shall commit to the rulers that as much as possible, they may preserve the same number of men having an eye to the wars, diseases, and everything else of this kind, and that as far as possible, one city may be neither too great nor too little. . . . and an ingenious system of lots, I imagine, should be made, that the inferior man may accuse his fortune and not the governors of the manner in which the couples are joined . . . and those of the youth who distinguish themselves in war, or anywhere else, ought to have prizes given them, and the most ample liberty of embracing women, that so, under this pretext, the greatest number of children may be generated by such persons."

Certainly, here is a eugenic program of a thoroughgoing sort. We need not consider the practical difficulties of carrying it out. How long the respected philosophers who are chosen as guardians would succeed in duping the people into thinking that all their offspring were being properly cared for may well be questioned. All schemes for eugenic reform involve making invidious distinctions, and this fact always creates practical difficulties about putting them into effect. Plato found the problem an embarrassing one. His solution of it involved a degree of political chicanery that is a bit out of harmony with the general moral tone of the writings of this eminent philosopher.

Aristotle, as might be expected, is more judicious and conservative. He recognizes the importance of good breeding and he counsels that "nothing imperfect or maimed be allowed to grow up." Like Plato, he recommends a discriminating infanticide in the interest of the race. The chief means of race improvement, however, are to be sought,

not so much in selective elimination, or even in selective breeding, as in the proper regulation of age at marriage. The husband should be twenty years older than his wife and he should not be permitted to beget children in his old age. The inferior people in the status of slaves were largely left out of Aristotle's scheme. They are useful members of society and their propagation may safely be allowed to take care of itself, at least until they threaten to become too numerous. The number of citizens in the city state, however, should be definitely regulated. This should be accomplished by restricting the period of propagation, or, in case of the failure of this method, by the employment of abortion. Aristotle had no definite plan for promoting race improvement. His eugenic proposals were negative and restrictive rather than aimed at raising the race to a higher level.

Of Roman eugenics there is little to be said. The exposure of weak and deformed infants was advocated as among the Greeks. In the reign of Augustus laws were passed with the end of increasing the birth rate in Roman families which had fallen off to an alarming degree, but beyond the prevention of race suicide the Romans do not seem to have had any definite eugenic aim. Many centuries passed before any eugenic proposals again made their appearance. In his *City of the Sun* (1683), the ill-fated genius Campanella presents a picture of an ideal society in which population is regulated more or less after the fashion recommended in Plato's Republic. The propagation of the race, according to Campanella, should be carried on in the interest of the community and not left to individual caprice. Marriages in this Utopia are controlled so as to insure a vigorous and well-endowed progeny.

The idea that the hereditary qualities of man might be improved by controlled breeding remained practically in abeyance until the influence of the doctrine of evolution brought it more prominently into the foreground. The credit

of being the founder of modern eugenics belongs more than to anyone else to Francis Galton who published a most important contribution to eugenic literature in his *Hereditary Genius* (1869). This volume based upon an impartial statistical study shows that genius has a strong tendency to run in families, and Galton argues ably in favor of the conclusion that this is because genius is largely due to heredity. The term eugenics was first used in Galton's *Inquiries into Human Faculty* (1883), a book which includes several discussions of eugenic problems within the wide range of its subject matter. Galton contributed further to support his thesis that superior ability is largely determined by heredity in his volume on *English Men of Science* (1874) and in a work written in collaboration with Edgar Schuster on *Noteworthy Families* (1906).

Galton's first exposition of a definite eugenics program was made in his Huxley lecture on *The Possible Improvement of the Human Breed Under the Existing Conditions of Law and Sentiment*, delivered before the Anthropological Institute (1901). The notion of eugenics was then relatively new and Galton approached the subject with due caution and circumspection. "I hope," he says, "to induce anthropologists to regard human improvement as a subject that should be kept openly and squarely in view, not only on account of its transcendent importance, but also because it affords excellent but neglected fields for investigation. I shall show that our knowledge is already sufficient to justify the pursuit of this perhaps the grandest of all objects, but that we know less of the conditions upon which success depends than we might and ought to ascertain."

Galton points out that human beings are extraordinarily diverse in their natural talents and other hereditary qualities and hence readily modifiable through selective breeding. We should therefore endeavor to further the marriage of the superior types and to dis-

courage the marriage of inferior stocks. The first of these ends he recognizes may not be easily attained. He suggests the granting of diplomas to individuals of superior worth. Another proposal is to supply to promising young couples healthy and convenient houses at low rentals in order to induce early marriages and larger families.

Although Galton was a man of wide intellectual interests and contributed significantly to the advancement of science in several fields, his efforts in later life came to center more definitely in the general problem of human improvement. Through the application of exact biometric methods he contributed much to further our knowledge of human heredity, and he played an important part in founding the Eugenics Education Society and its official organ *The Eugenics Review*. A large part of his fortune was spent in establishing the Galton Laboratory of National Eugenics in University College, London.

The director of this laboratory was Karl Pearson who, following in the footsteps of Galton, has contributed greatly to the development of biometric methods of research, and has made important contributions to our knowledge of human genetics and eugenics. Under Pearson's guidance the Galton Laboratory of National Eugenics has been very fruitful in research activities. The large *Treasury of Human Inheritance* contains many pedigrees of the inheritance of human traits.

Important papers have been published dealing with the inheritance of the diathesis to tuberculosis, the relative rôles of heredity and environment in the development of many traits both mental and physical, the rôle of natural selection in man, the effects of consanguineous marriages, and many other topics bearing upon the contemporary evolution of the human species. The work of this laboratory has done much to afford a sound scientific basis for eugenics, and through the *Eugenics Laboratory Lecture Series* and the *Questions of the Day and of the Fray*, to arouse popular

interest in various aspects of the subject.

Galton was led to the study of human heredity through the influence of the evolutionary writings of his cousin Charles Darwin. His methods of investigation largely determined the methodology employed by the workers of the Galton Laboratory. For a time more or less opposition developed between the biometricians and the Mendelians. Now, the value of the methods of both schools is recognized by all competent geneticists, and there is no longer much discussion as to the proper method to be employed for the solution of specific problems.

The establishment of the Galton Laboratory was followed by the foundation of The Eugenics Record Office at Cold Spring Harbor, Long Island, New York. Since its inception this laboratory has been under the direction of C. B. Davenport, an active worker in human genetics and eugenics. A few memoirs have been published and a considerable number of bulletins dealing with various aspects of human biology. Another institution devoted to race improvement is the Volta Bureau founded by Alexander Graham Bell who did valuable primary work on the inheritance of deafness and published a monograph on *The Formation of a Deaf Variety of the Human Race* and several subsequent studies. The American Breeders Association established in 1903 for the study of plant and animal genetics devoted some of its energies to eugenic problems. Later it became the American Genetics Association and its official organ, *The American Breeders Magazine*, became the *Journal of Heredity*. This journal publishes many contributions dealing with human heredity and eugenics.

In Germany interest in race improvement has become widespread. In 1904 the *Archiv für Rassen-und Gesellschafts-Biologie* was founded under the able editorship of A. Ploetz. This journal contains articles on all matters pertaining to the present biological evolution of the human species, and the means

that may be undertaken to promote race improvement. The *Archiv für Frauenkunde und Eugenik*, the *Archiv für Sozial Hygiene und Demographie* and the *Zeitschrift für Sexualwissenschaft* publish contributions in the same general field.

In France the eugenics movement has made rather less headway. The French have been concerned greatly over problems of population, but their chief interest has been more in the quantitative than the qualitative aspects of the subject. However, the latter consideration has been by no means neglected. A society for the promotion of eugenics was founded in 1913 in Paris and included among its numbers such men as Ch. Richet, L. March, E. Apert, A. Pinard, E. Perrier, F. Houssay, and other prominent scientists. The official organ of the society *L'Eugénique* was first issued in 1913. A Société Belge d'Eugénique has been founded, but it has not flourished.

The eugenics movement has attracted considerable attention in Italy but as in France quantitative aspects of problems of population are emphasized more than those relating to racial improvement. In Sweden there is a flourishing institute for race biology under the directorship of H. Lundborg. This institute has published a number of fine monographs on the racial characteristics of the Swedes and Lapps, and made valuable contributions on human genetics. A similar institute is established in Norway and publishes a periodical *Den Nordiske Race* devoted to anthropology and race hygiene. Eugenic societies have been founded in Hungary, Switzerland, Russia, Japan, Brazil and a number of other countries.

There have been three International Congresses on Eugenics during the last 15 years. The first of these was held in London in 1912 under the presidency of Leonard Darwin, one of the several distinguished sons of Charles Darwin. A second International Eugenics Congress was held in New York in 1921, and a third in New York in

1933. The published proceedings of these congresses cover a very wide range of topics from the genetics of domestic animals to the international relationships of human beings.

During the last few decades interest in population problems has become more widespread. The rapid growth of the population of most civilized countries inevitably drew the attention of economists and politicians to the many situations which grow out of the increase of numbers. Not only have books and articles dealing with population increased in number, but there have been organized a number of societies concerned with this subject. A few international conferences on population have been held and it is a noteworthy fact that many of the papers presented deal with eugenic problems. The works on population following the celebrated Essay of T. R. Malthus (1798) were first concerned mainly with the phenomena of population increase and paid little heed to the eugenic aspects of the subject. Of late years discussions of qualitative changes have assumed a more prominent place. Most recent books on population devote considerable space to the differential birth rate, the selective influence of mortality, and various measures for improving the quality of future generations.

A somewhat similar trend is to be observed in the movement for birth control. In its inception this movement was motivated by the humanitarian consideration of relieving overburdened parents from the hardships attendant upon frequent births and the support of large families. Little thought was given to the eugenic aspects of contraception. Many eugenicists were inclined to look askance at the proponents of birth control, and some of them still are, but in general their attitude is changing. If one looks over the pronouncements on birth control in the *Eugenics Review*, for instance, he will discern a change of attitude from one of qualified disapproval to one of almost ardent advocacy. On the other hand, such publications as

The Birth Control Review are including more material bearing on eugenics; for one of the arguments now frequently employed by the proponents of birth control is that it affords the most feasible means of overcoming the evils of the differential birth rate, and hence of making possible a genuine eugenic reform.

The eugenic aspects of many subjects are coming to receive much more attention than in previous years. In journals devoted to education, especially educational psychology, there are many studies bearing on the relation of heredity to educability, the innate differences in the mentality of human beings, and the relative rôles of heredity and environment in the development of intelligence and emotional traits. It is noteworthy the *27th Annual Report of the Society for the Study of Education* devoted two bulky volumes to the subject of *Nature and Nurture in Mental Development*. Not only in educational journals but in periodicals devoted to psychology, the social sciences, medicine, genetics, and topics of general interest, one meets with many articles dealing with eugenic problems. Courses concerned specifically with eugenics are now given in colleges and universities and the subject commonly receives attention in courses in biology, psychology, and the social sciences.

Interest in eugenics is not only becoming more widespread, but the dissemination of eugenic knowledge is coming to bear fruit in practice. This is shown especially in procedures for dealing with the defective classes. There has been better regulation of marriage. In the United States laws for the sterilization of defectives have been passed in 28 states of the Union, and 16,066 operations have been performed up to January 1, 1933. The first sterilization law was passed in Indiana in 1907, but on account of the opposition of Governor Marshall it became a dead letter. The extent to which sterilizations have been carried on varies greatly in different states. In California more operations

have been performed than in all the other states combined. Up to January 1, 1933 these have totaled 8,504; 4,423 on males and 4,081 on females. Many of the sterilization laws were vaguely drawn and were later declared unconstitutional or otherwise set aside by the higher courts. The Virginia statute, however, has been upheld in a decision handed down by Justice O. W. Holmes in a case *Buck versus Bell*, which was carried to the United States Supreme Court. Other countries have sterilization laws, the most noteworthy case being the recent legislation in Germany under which a considerable number of operations have already been carried out.

Measures for increasing the number of superior hereditary types, as contrasted with those for eliminating bad heredity, have nowhere been carried out in any effective manner. Aside from eugenic education with the aim of securing a better type of marriage selection and the development of a sense of obligation to perpetuate desirable hereditary qualities, the most feasible proposal that has been made is through the extension of the system of family allowances. This system by which workers are compensated in part according to the number of their children has been in operation for several years in France and to a less extent in several other countries, but thus far the allowances have not been sufficiently great to have had any discernible influence upon the birth rate. Whether indiscriminate family allowances would work eugenically or dysgenically is a matter of dispute.

A system could be devised of course which would work eugenically. The practical difficulty lies in securing its adoption. A family allowance system has been officially sanctioned by the Eugenics Society of London, and in one form or another has been advocated by several prominent eugenicists as the most feasible means of checking the gradual extinction of the more highly endowed members of the race.

A fairly comprehensive *Bibliography of Eugenics* by S. J. Holmes was published by the University of California Press (1924). More recent literature is compiled by Eugenic News in its *Bibliographia Eugenia*. A brief bibliography of eugenics issued by the Eugenics Society of America is now out of print, but it is reproduced in Huntington and Whitney's *Builders of America*.

A. M. Carr-Saunders, *Eugenics* (1926); E. G. Conklin, *Heredity and Environment in the Development of Men* (1923), *The Direction of Human Evolution* (1921); L. Darwin, *The Field of Eugenic Reform* (1926); E. M. East, *Mankind at the Crossroads* (1923), *Heredity and Human Affairs* (1927); F. Galton, *Heredity Genius* (1869); M. F. Guyer, *Being Well-Born* (1927²); S. J. Holmes, *The Trend of the Race: A Study of Present Tendencies in the Biological Development of Civilized Mankind* (1921), *Studies in Evolution and Eugenics* (1923), *The Eugenic Predicament* (1933); H. S. Jennings, *The Biological Basis of Human Nature* (1930); T. Nisot, *La question eugénique dans les divers pays* (Brussels, 1927); P. Popenoe and R. H. Johnson, *Applied Eugenics* (1933²); T. B. Rice, *Race Hygiene* (1929); A. G. Roper, *Ancient Eugenics* (1913).

S. J. II.

EVOLUTION OF THE OBSTETRIC FORCEPS. Obstruction to labor due to disproportion between the fetal head and the birth-canal has been an obstetric complication throughout the ages. No social stratum was exempt. Queen Henhenit, one of the wives of Mentuhotep II, of the XIth dynasty (2050 B.C.) of Egypt, died from an obstructed labor at her first confinement, her mummy showing an immense vesicovaginal fistula produced during the process of extraction of the impacted fetus; and the mummies of some of the Egyptian and Coptic women have revealed the fetal heads impacted in the pelvic canal. It is appalling to imagine the tremendous loss of fetal life resulting from this cause during the thousands of years of recorded history.

Apparently, the first aim of the ancient midwives was to remove the fetus in the interest of the mother, irrespective of the effect upon fetal life. Leavitt, of St. Paul, who made an exhaustive study of this subject, has distinctly shown this. The instruments

employed for fetal extraction were definitely of the nature of cranioclasts; hence, the delivery of a living child was not anticipated. The crude instruments and models which have been discovered by archeologists were all destructive in their effects. The early Egyptians, the Copts, the Arabians, the Greeks and the Latins were familiar with such devices, which took the form of "hooks, screws, loops, levers, toothed forceps and griffin's claws."

Even in the time of Queen Elizabeth, of England, as Leavitt states, the midwives employed "hokes, tongues, and other thyngs made for the nonce"; and Thomas Raynalde's handbook for the midwives of her period, "The Woman's Booke on the Byrth of Mankinde," authorized these women to "annoint the hand with the oil of lillies and introduce it into the matrix to ascertain the position of the fetus, that she may the better put in hookes and such instruments to pluck it out withall."

Just when and where the idea of the instrumental delivery of a living child originated is not known, even as the invention of the wheel, the most valuable of devices for locomotion, is lost in the obscurity of the ages.

That the possibility of an instrumental extraction of a living child was unknown to the general practitioners of medicine in ancient times is proved by the fact that none of the medical writers of those days mention such instruments. Hippocrates, Galen, Celsus, Albucasis, Paulus Aegineta and the other early Greek, Arabian, Gallic and Roman physicians fail to speak of them; nor do the more recent writers, Raynalde, Paré, Mauriceau, De la Motte and Deventer speak of other than the instrumental delivery of dead fetuses by means of hooks and cranioclasts. Indeed, it was Ambrose Paré, who died in 1590, who, despairing of such a delivery of a living child, devised the operation of *version* or *turning* to effect a successful accouchement of impacted or obstructed heads.

Doubtless, many during all this time conceived the desirability of a forceps or hand-like instrument which could grasp the fetal head for the purpose of traction; and it is positively known that such instruments, crude and largely ineffective, were attempted at various times and places. Avicenna, an Arabian physician of the tenth and eleventh centuries, was the first to speak of the possibility of the instrumental delivery of a living child; but even this suggestion apparently was ignored for hundreds of years. A literal translation of Benedictus Rinius' Latin translation of Avicenna's statement is as follows:

"Chapter 28. Of the conduct of that (case) the delivery of which is difficult because of the size of the fetus.

"It is necessary that the obstetrician exercise a good holding back of the fetus of this kind. Wherefore particularly in the extraction of it (it should be done) gradually; then if that avails for it, it is well; and if not, he may bind it about with a border of cord, and may draw it carefully, with repeated tractions. But if that does not bring it on, forceps may be used, and it may be extracted with them. If in truth that does not bring it on, it may be extracted by incision, and according as it may be easy, and may be treated in the manner of a dead fetus."

Early in the sixteenth century the idea of instrumental extraction of the living fetus had definitely developed to such a degree that a forceps had been invented for that purpose. In 1524, Jacobus Ruoff published his treatise on midwifery, in which he described and illustrated a crude forceps which he had invented. The blades of this instrument were solid, of two lengths, long and short, and were joined together at a fixed point. Ruoff distinctly states that this instrument was not armed with teeth, and that a living fetus could easily be extracted by it if it were possible to apply the blades to the head. Being fastened together, however, their application to the sides of the fetal head was

impossible. Nevertheless, the forceps idea had been conceived.

It is probable that the vectis, which is believed to be the invention of Peter Chamberlen at the beginning of the seventeenth century, was the direct outcome of numerous futile efforts made from time to time to supplement the ineffectual manual extraction of the head by pieces of smooth flat metal, ivory or other hard substances applied to the sides of the fetal head. The vectis was a notable step forward in the evolution of the modern instrument, being, in fact, one-half of the forceps. It was not long before the idea of a double vectis, one being applied to either side of the head simultaneously, originated. Thus, a two-bladed forceps was evolved, without fixation of the blades to each other, which was the next step to be devised. The Chamberlens attempted this by means of a leather thong wrapped around the shanks of the blades, which they also elongated somewhat. Later, Peter Chamberlen devised a fixed lock to secure and immobilize the two blades.

Carrying on the idea of a metallic hand for grasping the fetal head, Palfyn, in 1720, invented his *mains de fer*, soon to be known as the "Palfynian hands," with wrist-like handles. A long period then elapsed, during which time little or no progress was made, but in which various obstetricians in England and on the Continent employed instruments approximating the Chamberlen type, but with uncertain and unsatisfactory results.

It is believed that the secret instruments passed out of the hands of the Chamberlens about 1695, shortly after the death of the younger Peter Chamberlen, and that they lay concealed for over one hundred years in a chest in a closet in Mortimer Hall, Essex, the old country house of the family, where they were discovered in 1813. Five years later, in 1818, Carwardine presented these instruments to the Royal Medical and Chirurgical Society of London, thereby solving a century-old mystery.

The Chamberlen equipment included levers, crotchets, fillets and forceps. There were four sets of the latter, and it is interesting to note the progressive evolution of the instrument as shown by these models. In the oldest pattern, the blades touch one another when closed, that is, *there was no cephalic curve*. The blades were crossed and united by a riveted pivot. The blades in the other patterns do not cross, nor do they touch when closed, that is, a small *cephalic curve* had been added. The blades of the later patterns were fastened together by a tape at their point of locking, and the fenestra were not of equal size. In the third pattern, the blades measured twelve inches in length and had fenestra of equal size. The fourth pattern had blades resembling those of the third type, but were stronger in construction and thirteen inches in length; they were held together by a loose pivot. Two of the forceps were furnished with the ordinary oval scissor-handles to facilitate grasping; in another one, the handles ended in large blunt hooks for the purpose of extraction of the head of the dead fetus when delivery of a living child was impossible. There were three pairs of each of the second, third and fourth patterns, and these were probably the instruments belonging to the three Peter Chamberlens.

The obstetric forceps was now an accomplished fact and public property. All that remained to do was the improving and developing of the crude model into the finished product of today. The concluding steps in the evolution of the instrument were of this nature, and these were presented to the profession at various periods during the last two centuries. It is true, as Kleinwachter observed a century and a half ago, almost every obstetrician of prominence has suggested trivial alterations to the blades, but with the exception of the vital additions of the pelvic curve and the principle of axis-traction, these alterations have not materially changed the form nor the efficiency of the instrument.

The depth of the cephalic curve and the width of the blades were increased from time to time, but it was not until 1740 that Benjamin Pugh suggested curving of the blades to accommodate them to the curve of the parturient canal. He failed to describe this alteration in print until 1754, and, in the meantime, in 1747, André Levret, a physician of Paris, published an account of the *pelvic curve*, the invention of which has, therefore, been generally accredited to him. This was a most important addition to the instrument, a change which permits a much higher application of the blades, and it remains to this day a fundamental part of the improved instrument.

Six years later, in 1752, William Smellie devised the slotted shanks, the so-called "English lock," which is largely used in the modern instrument. The *perineal curve*, suggested and described by Wallace Johnson in 1769, was probably the first step toward the idea of axis-traction, although it was designed to avoid the obstruction caused by the perineal body with consequent injury to that structure. It was not until 1844, however, seventy-five years later, that Hermann, of Berne, Switzerland, and Pajot, of Paris, devised the method of *axis-traction*, the honor of the invention being generally accredited to the latter obstetrician. Thirty-three years later, Tarnier, of Paris, presented his improved axis-traction forceps to the profession, and his instrument remains today the accepted form of this type of the forceps. About the middle of the nineteenth century, Sir James Y. Simpson contributed the corrugated handles to the long forceps, and these are now generally employed.

The principle of axis-traction, while commonly approved by the profession, was not universally accepted. Reath, of Edinburgh, and other noted obstetricians took a stand against it. The recognized objection to the Tarnier forceps was the imperfect grip it took on the fetal head, which it seized obliquely and not in the transverse or biparietal

diameter. Such a hold naturally caused a distortion of the normal moulding of the head with a consequent undue pressure upon the cephalic bones. Christian Kjelland (Kielland), endeavoring to correct this vital error, in May, 1915, presented his forceps to the Munich Gynecological Society. This constitutes the last step to date in the evolution of the obstetric forceps.

Kielland's instrument is characterized by a somewhat lighter construction than that of other forceps, with an extremely small pelvic curve, and a sliding lock which permits a progressively closer approximation of the blades to the sides of the head (the normal grasp of the forceps in the biparietal diameter) during the process of traction. It is best suited to those cases in which the sagittal suture lies transversely in the maternal pelvis. After locking, the blades lie in the anteroposterior or conjugate diameter of the maternal pelvis.

The modern obstetric forceps, one of the most important and most valuable surgical instruments ever devised, but also one that is as potent for evil as for good if improperly used, is largely a product of the French mind. The dual vectis with fenestrated blades originated with the Chamberlens, of London, a Huguenot emigré family which left France toward the close of the sixteenth century (1569). The primitive form of the instrument and the cephalic curve were also the contributions of these men; while Levret, of Paris, added the pelvic curve, and Pajot and Tarnier, of the same city, gave the principle of axis-traction.

For convenience in reference, the stages of the evolution of the forceps are graphically presented in the following chronological table:

CHRONOLOGY OF THE OBSTETRIC FORCEPS

- 1.—The idea was first conceived.
 11th Century—Avicenna (980-1073), Arabian physician, mentions the use of forceps for extracting a *living* child. Other writers after this date mention a similar use of the forceps (Partridge, 1905).

- 1524—Jacobus Ruoff publishes his treatise on obstetrics, in which he describes and illustrates a long and a short forceps with *solid* blades and a *fixed joint* for extracting a living child. (Could not be applied.)
- 1555—Benedictus Rinius makes a Latin translation of Avicenna's statement.
- c. 1600—Peter Chamberlen (d. 1626) invents the *vectis* and probably the least perfect of the three Chamberlen models.
Dr. Peter Chamberlen (1601–83) probably devises the *dual fenestrated blades* and the *cephalic curve*. He fastens the blades by a *leather thong*; later, he devises the *fixed lock*.
- 1670, Aug. 19—Dr. Hugh Chamberlen, Sr. (b. c. 1630; d. —) unsuccessfully attempts the delivery of Mauriceau's patient.
- 1673—He translates Mauriceau's textbook of midwifery.
- 1686—He flees to Holland, and sells his secret to Rojer Roonhuysen, of Amsterdam.
- 1696—2d edition of Chamberlen's translation of Mauriceau's book contains the first reference to the obstetric forceps.
- 1720—Jean Palfyn, of Ghent, Belgium, invents hand-like blades with wrist-like handles (*maines de fer*; "*Palfynian hands*"). Gives the first public demonstration of the forceps.
- 1722—Palfyn and Edmund Chapman, of London, publish a description of the Chamberlen instrument.
- 1724—William Giffard (d. 1731), a man midwife of London, introduces the forceps into general use as an obstetric instrument. He used the forceps from 1724–31.
- 1728, June 28—Giffard makes his first successful delivery by forceps.
- 1728—Drinkwater, an English surgeon, dies and leaves a pair of forceps.
- 1733—Edmund Chapman publishes a description of the Chamberlen instrument; claims to have used it seven years before (1726). About this time, a surgeon and "man midwife" of Brentford, England, used a similar forceps.
- 1734—Giffard's book, "Cases in Midwifery," is published; it contains a description of the Chamberlen instrument.
- 1734—Butter, an Edinburgh surgeon, reports that Mr. Duse uses a forceps in his practice in Paris.
- 1740—Benjamin Pugh, of Chelmsford, England, is said to have independently devised the *pelvic curve*. He first describes it in print fourteen years later (1754).
- 1742—Fielding Ould states that long forceps are in general use throughout Europe.
- 1747—Peter Rathlaw publishes a description of Chamberlen's forceps.
- 1747—André Levret, of Paris, publishes an account of the *pelvic curve*.
- 1752—William Smellie (1680–1763) publishes his textbook containing a description of the *pelvic curve*.
He lengthens the instrument and covers the blades with *leather*.
- 1752—Smellie devises the *English lock*.
- 1753—Visscher and Van der Poll buy the secret and make it known to the world (it proves to be the *vectis* only).
- 1759—3d edition of Chapman's book contains a *plate* of the Chamberlen instrument.
- 1769—Wallace Johnson describes the *perineal curve*.
- 1813—Chamberlen instruments *discovered* in Mortimer Hall, Essex.
- 1818—Curwardine presents these instruments to the Royal Medical and Chirurgical Society of London.
- 1844—Hermann, of Berne, Switzerland, devises the principle of *axis-traction*.
Pajot, of Paris, describes *axis-traction*, and is generally credited with the idea.
- 1860—The *Chassihny tapes* for axis-traction are devised.
- 1860—Hubert, of Louvain, describes the "*compensation curve*."
- 1866—Hubert fixes a *bar* at right angles to the shank for the purpose of axis-traction.
- 1868—Aveling curves the handles backward.
- 1871—Morales makes a large *perineal curve*, but keeps the handles in line with the blades.
- 1877, Jan. 24—Tarnier, of Paris, presents his curved *axis-traction forceps*.
- 1915, May—Christian Kjelland (Kielland) presents his *forceps* before the Munich Gynecological Society.
J. H. Aveling, *The Chamberlens and the midwifery forceps: memorials of the family, and an essay on the invention of the instrument* (1882); Katherine R. Drinkwater, *The midwifery forceps: historical sketch* (Liverpool Medico-Chirurgical Journal, 1913, 451–65); C. B. Ingraham, *The Chamberlens and the obstetrical forceps* (American Journal of Obstetrics, 1911, 827–49); F. Leavitt, *The obstetric forceps: an historical sketch* (St. Paul Medical Journal, 1910, 53–65); H. G. Partridge, *The history of the obstetric forceps* (American Journal of Obstetrics, 1905, 765–73); J. R. Quinan, *Historical study of the invention and publication of the English midwifery forceps* (Maryland Medical Journal, 1881–2, 292–97).

W. A. N. D.

EXOGENIC NAME. Among primitive peoples, a name obtained by marriage outside the group, clan or tribe.

EXOGAMY (Greek: *ex*, out, without; *gamos*, marriage). A tribal custom, among primitive peoples, forbidding

marriage within the tribe, group or clan; the opposite of endogamy.

FAMILIA, the Latin word containing the element *famulus* (slave), signifying the totality of the possessions of a *paterfamilias*.

John Lubbock (*Origin of Civilization*, 1870, ch. iii): "Among the Romans, the word *familia* meant *slaves*, and a man's wife and children only formed a part of his family inasmuch as they were his slaves; so that a son who was emancipated—that is to say, made free—had no share in the inheritance, having ceased to belong to the family."

FAMILY, THE PRIMITIVE. However paradoxical it may sound there is no such social phenomenon as the "primitive family." Certainly primitive peoples have families, but many forms of marriage and family organization occur in so-called primitive communities. At the very beginning it is essential to make clear what we mean by the term *primitive*. The prevailing tendency in sociology and anthropology is to use the term pre-literate as the distinguishing mark of simpler forms of human culture. By primitive, therefore, in this article we mean, not only the simple aboriginal peoples still living, for example, in Africa, the South Pacific Islands, and parts of Asia, but also pre-historic human cultures.

The term family covers a multitude of organization patterns. Its simplest form, of course, is the mother-child relationship, with the father-mother-child as next in order. But much more complicated forms occur on the primitive level; for example, grandparents-grandchildren and collateral relatives; also, the so-called "great family" which may include a great grandfather or grandfather as head of the household with all his children married and unmarried, their children and also collateral kindred. The Slavic *Zadruga* belongs to this general type and is still encountered in the Balkans. Even slaves have sometimes been included. Indeed the etymology of the word family strongly hints that fact. Frequently primitive marriage and kinship is much more complex than our modern system be-

cause of such phenomena as a broader method of reckoning kinship, totemism, classificatory systems and magic.

The early history of the family is very difficult if not impossible to trace with any degree of accuracy. Social origins are notoriously indistinct and the evolution of social institutions is crowded with uncertainty. While it would seem to be, to say the least, gratuitous to accept the principle of evolution as applying to all other phases of life while denying it in the field of human culture, nevertheless it is much more difficult in our present state of knowledge to lay down any nicely defined evolutionary stages in human culture or institutional history. It is easy to work out the sequence of the development of different tools, but there is no such absolute gradation or series so far observable in the non-material phases of culture. If there is such a series it is at least discontinuous. On the whole, American anthropologists are skeptical of any such evolution; but insofar as the family is concerned certain European anthropologists are still convinced that there has been a general line of evolution in the development of family stability.

Since man seems to have lived on this planet for perhaps about two million years, it is evident there must be an enormous expanse of human culture or human institutional life stretching far back of the slender historical period. How to reconstruct in some way this vast cultural *terra incognita* has been the preoccupation of students in the field of the primitive family. Of the various possible methods direct observation is obviously out of the question. Archaeology yields comparatively little beyond a few inscriptions, pictures, tools or household utensils. The material elements in domestic life can be rescued to a certain extent from the past but the essentials of family life which are primarily biological, psychological, and conventional, are in the highest degree perishable and evanescent. Therefore the investigator tends to look for them in such sources as folklore, myths,

legends, proverbs. These sources yield occasional hints and glimpses of pre-literate family life. Earlier writers and a few present-day students make much of linguistic evidence such as roots or comparative words, phrases and terms of relationship. From the presence or absence of a certain word in a tribal language these writers have been prone to draw the conclusion that a corresponding aspect of the family or concept of relationship was present or absent. For example, it was seriously stated that because certain tribes had no word for father, therefore fatherhood was not recognized in these particular tribes. This was, of course, a very dangerous methodology and tended to lead into wild hypotheses. Much of the early vogue of the matriarchate was due to misuse of comparative linguistics.

Another source sometimes used for reconstructing social origins is psychological inference, that is, projecting back upon the plane of pre-history the nature of present day man, his needs and his fundamental psychic makeup and qualities. For example, many writers have used the qualities of jealousy and sexual aversion of housemates in this manner with anything but happy results. The use of biological inference is somewhat sounder in attempting to set up the primordial family because of the obvious fact of maternity and the equally obvious, and indeed inescapable needs of the human infant in its earliest years. From this fact is derived, therefore, not only an archetype of family life but also a philosophical and educational theory of the growth of the human mind and human culture as the result of the prolongation of human infancy.

A still further source of materials for reconstructing the primitive family is a comparative study of the life of animals. But it is safe to say that any structure of pre-history which is based upon the study of animal life is flimsy to a degree, for the domestic life of animals presents little but contradiction and confusion, to say nothing of senti-

mentality and romancing. Stories of monogamic devotion of certain kinds of birds may be matched with an almost grotesque promiscuity among others, notably the wrens. Even on the mammalian or anthropoid levels there is no consistency of domestic behavior; at least not enough to warrant any argument for any one particular type of human family pattern. About all that can be derived from the study of animal behavior is the apparent principle that the place on the evolutionary scale which an animal species attains is rather closely correlated with the degree of parental care for offspring.

The final source of materials for reconstructing the early family history of man is the study of contemporary so-called primitive peoples or tribal cultures. This study is motivated by the idea that according to any hypothesis of man's antiquity or of evolution, there must have been many lower stages than any now existing. Therefore, contemporary primitive peoples are studied for hints and leads backward into the past, and these hints or leads are ordinarily discovered because of their great contrast with forms and practices of so-called civilized societies. The study of primitive tribes takes on to a certain extent the hunt for "survivals" of earlier beliefs, practices and social patterns.

It must be confessed that from all of these sources a rather meager amount of material has been produced which could give us any authentic idea of the family life of the remote past. For that reason certain contemporary sociologists and anthropologists tend to throw overboard entirely the quest for social origins. Much of the argument turns upon three points: first, that any hypothesis based upon no direct evidence is scientifically negligible, and is therefore outside the ambit of serious discussion. But here, of course, opinion may vary widely as to how far so-called evidence is valid. To a philosopher, for example, certain facts are valid and indeed essential which a physicist might

reject as not having yet been proved by laboratory experiment. A second point is that much or all of the evidence labelled survivals in present day cultures must be interpreted functionally in terms of such cultures and not as survivals, not as fossils from some past culture complex. In answer it must be pointed out that a culture trait may be both functionally alive and fossilized culture; for folkways are strangely and notoriously resistant. A third point in the argument is more tenable; namely, that animal behavior offers no indisputable evidence because mutations occur in conduct and culture as well as in physical structure.

There need be no danger in the quest for social origins and in the utilization of materials derived from these various methods of reconstruction provided they are not designed to bolster any particular social form or do not play into the hands of propagandists who are bent on establishing some bizarre concept of sex freedom, social control over sex, property or religion. The study of the past history of the family will continue to intrigue investigators, although the current trend, particularly in family text book writing, is rightly or wrongly to minimize the primitive family and to emphasize present-day trends, attitudes, changes and functions of the family.

Western social and legal as well as religious thought has been dominated by Christian theology and canon law. Over practically the whole Mediterranean area and its colonizing offshoots, official permanent monogamy has been the prescribed pattern. It was ordinarily assumed that since God established marriage according to the Adam-and-Eve, Garden-of-Eden pattern, this form would hold for the heathen as well as the orthodox, insofar as speculation looked beyond the Mediterranean circle. The patriarchal type of family which was clearly assumed by the fathers of the Christian church, was apparently also taken for granted by classical thinkers. The *patria potestas* held for both Greek and Roman domestic organiza-

tion. There was apparently little concern about barbarian social patterns insofar as classic thought ever reached out beyond its own immediate centers. Neither the Utopian writers from More to Morely, nor the romantic social philosophers of the 18th and early 19th centuries added much, if anything, by way of a realistic concept of primitive family life. Scant wonder, then, that the first dominating theory of the 19th century was the patriarchy announced by Sir Henry Sumner Maine in 1861. This theory was derived mainly from classical sources because at that time comparatively little had been done by way of orderly ethnological or anthropological study. The richest mine of source material was still to be found in the Jewish and Christian scriptures and the classical texts. The work of the mid-nineteenth century German institutional historians gave a new impetus to the study of the family but this impetus hardly reached back into the primitive field. Its data and its methodology tended to be limited to the European area.

Only with the upswing of the evolutionary theory after 1860 was the study of institutions, including the family, projected back into pre-historic times. Herbert Spencer's grandiose and universal cosmic plan of evolution included human society and gave much attention to sequential forms of the family. For the first time in sociological writing Spencer delved into ethnographic materials on a large scale. His generalizations set others to work. About this same time modern anthropology really came into being with the work of Englishmen like Taylor, McLennan, Lubbock, the Germans Waitz, Peschel, Post, and others. In general the evolutionary theory of the human family held that in the beginning men and women lived together in more or less promiscuous relationships; that out of this promiscuity the mother-child bond was the only definite, obvious and stable family relationship and therefore this became the germ of the family; that various forms

more or less in sequence followed, out of which came plural marriage and finally genuine permanent monogamy. This evolutionary theory had much more to support it than the earlier patriarchists could command. The accumulating evidence for matrilineal systems and matrilineal forms among primitive hunting peoples, together with the frequent finding of the paternal family amongst pastoral peoples, reckoned higher in the civilization scale, gave some color to the idea of a sequence of patterns. Tylor therefore announced that "the institutions of man are as distinctly stratified as the earth on which he lives."

This general doctrine of evolution together with an exhaustive knowledge of certain American Indian tribes led Lewis Henry Morgan, the American, to the most explicit and positive early statement of the evolutionary theory of the family. He accepted three stages of human culture; namely, savagery, barbarism and civilization. Then he laid down very definite patterns through which the human family was universally to pass in its primitive stages. He assumed primitive promiscuity followed by two modified forms of promiscuity known as "consanguine," then "Punaluan" or group marriage. Out of this by way of intermediate forms comes pair marriage or monogamous union of a more or less durable nature.

Morgan's theories would probably have attracted little attention had they not been seized upon by socialists anxious to set up a concept of human institutions dominated and determined by economic considerations and subjected to a law of inexorable sequence. Morgan's idea of necessary evolutionary sequence fitted in exactly with their needs. Most of the socialist doctrine on the family still harks back to Morgan notwithstanding the fact that most sociologists and anthropologists, even though possibly accepting a general principle of evolution and sequence, reject Morgan's precisely formulated stages and their implications.

Cutting across the work of the evolutionists and to a certain extent giving them aid and comfort came the famous *Das Mutterrecht* of the Swiss scholar, Bachofen, in 1861. In this work he promulgated his theory of original primitive unregulated communism, ("hetairism") followed by matrilineal kinship and along with it the matriarchate ("gynocracy") which eventually yielded to the classical patriarchal type of marriage. This theory was taken up by McLennan who also held to a theory of original sex promiscuity of which polyandry was the first general modification of promise. Paul Gide, the eminent French legal scholar, also followed Bachofen in the main. Morgan also accepted at least Bachofen's primary idea of antecedent promiscuity. W. G. Sumner likewise apparently inclined to the notion of original promiscuity. Lester Ward's theory of woman rule, gynocracy, relates back to this same tissue of ideas. But the theory had opponents who were not slow to point out its weaknesses. They include Darwin, Westermarck, Wake, Peschel, Deniker, Starcke and Crawley. They cited the instinct of jealousy, of subhuman monogamy, and monogamy amongst the lowest human tribes in refutation. They rejected such survivals as *jus primæ noctis* as any valid evidence; and they showed that occasional seasons of sex license were not necessarily throw-backs to an earlier stage.

The existence of so-called group marriage has been frequently treated as evidence of at least a modified promiscuity. Its existence has been vouched for by Howerth, Spencer and Gillen, Post, Kohler, Rivers, Wake, Bachofen, Max Thal and Morgan. But Westermarck, Thomas, Crawley, Andrew Lang and others have rejected or reduced to very limited significance the theory of group marriage.

By the end of the 19th century, therefore, not very much remained that was viable, in what might be called the "strict and definite stages" idea of the

evolution of primitive family life. At least it was pretty generally agreed that there were no such nice and tidy transitions as the earlier evolutionists had assumed.

The next outstanding contribution to the theory of primitive family life came from Westermarck. It is not easy to label his theory because it is a combination of the evolutionary principle and what we have earlier called psychological and biological inference. Westermarck goes back to the pre-human level and claims to find evidences of a tendency towards strict pairing among animals as a basis for the theory of more or less instinctive monogamy. He holds that monogamy was the primary and predominant family pattern and that all other forms are variants or divagations from this central type. The psychological element in his analysis makes heavy demands upon a theory of human instincts not entirely supported by present-day psychology. Thus he assumed the sexual aversion of housemates as a basis for his theory of exogamy and the incest taboo. Westermarck made even greater use of anthropological and ethnographic evidence than did Spencer. In any event his work has dominated the thinking of students in the field of the primitive family for the last forty years, has gone through successive editions and enlargements, and has assumed the character of a classic in the field.

The greatest challenge to Westermarck has come from three sources, namely, Briffault's massive work *The Mothers*, literary communists like Calverton, and the careful field studies of anthropologists and ethnographers during the last thirty years. Briffault reverts to Bachofen and Morgan for his fundamental ideas, but for methodology turns to Westermarck in spite of the fact that his objective was to show up the fallacies in the latter's theory of primordial pair marriage. He concludes that the horde preceded the individual family in social evolution and that woman's influence was dominant in

primitive group life. He rejects Westermarck's biological and physiological arguments and especially his method of psychological inference. Thus he minimizes the role of jealousy as an element in fixing individual possession and sex mating.

Calverton and others reject Westermarck and other earlier writers as examples of special pleading, more specifically as attempts to bolster up middle class culture and supremacy of their day. It must be said in all fairness that if these studies of family life unconsciously took on the color of apologetics for the established bourgeois social order, the fulminations of their critics are frank and undisguised propaganda for destruction of the existing order and its institutions. Unfortunately much that has passed for critical examination of genuinely scholarly work must be interpreted as smoke screens for personal attitudes.

Most of these earlier writers on the primitive family and their critics have been (like Karl Marx and many socialist doctrinaires) library workers. Hence the present tendency toward reticence in the matter of making broad generalizations or setting up "norms," and a tendency toward greater emphasis upon direct field observation and detailed study of primitive cultures *in situ* and *as wholes*. Some slight use of statistics has been made by Tylor, by Hobbhouse, Wheeler and Ginsberg, and by others in synthesizing ethnographic data. But just at present anthropologists and cultural sociologists are suspicious of the "comparative method" by which earlier writers from Spencer onward lifted individual culture-traits from their matrix in order to set up generalizations and sequences of societal patterns. The comparative method is valid, but must be used with great care and discrimination, a precaution not commonly observed, particularly by the evolutionary school of writers.

Can anything be said, then, with reasonable assurance of scientific accuracy

about the primitive family? The present day theory of primitive family life accepts in general that the mother-child relationship was the most fundamental and primordial pattern on the primitive level. It holds that while it is possible that single-pair marriages of more or less enduring nature have always been the most common pattern of primitive life, nevertheless many experimental, pragmatic attempts were made to set up other patterns; that natural selection has tended to dispose of those patterns which were not in accord with elementary human nature or human culture; that there has been no universal sequence of definite forms and that monogamy is not an innate instinct but rather as Morgan held, "a growth through experience, like all the great passions and powers of the mind."

It is possible to be more specific on certain aspects of early family life. For example, so far as evidence in hand goes, it is clear that family life has always been rather definitely controlled and patterned by the social group. Who may marry at all, whom an individual may or may not marry, who owns the domestic property, who disciplines the children, these and many other situations are more or less carefully prescribed on the primitive level. Exogamy is all but universal, however its origin may be explained. Incest is taboo. Hence frequently tribes are divided into sibs or classes or totem groups within which marriage is prohibited. In some cases the reckoning of legal exogamic marriage on the primitive level becomes as complicated as it is under the caste-systems and astrological beliefs of present-day Hindus. Some tribes go beyond mere prohibition of marriage between near kin, sib-mates, or totemic relatives and set up so-called preferential mating. The two most common forms of this positive regulation are the *levirate* (by which a widow is taken over by her deceased husband's brother) and the *sororate* (in which a man marries also his wife's younger sisters). The Hebrews have made the

levirate familiar to us, but the custom exists in probably more than a third of primitive tribes. The sororate is less widely encountered. Both these forms are associated with polygamy, and are to be considered rather as duties than as perquisites of the individuals involved.

If monogamy is the commonest type of marriage, how widespread is polygamy? Polyandry is comparatively rare, found nowadays mainly among the agricultural Tibetans and the Todas of India. It probably never was very common. Polygyny is widely distributed in space and time but is rarely practiced by more than a small minority of the men of a tribe or community. Many reasons have been offered for the fact, but probably poverty, jealousy, inertia and monopoly by the strongest men have figured most commonly.

There is considerable evidence for the judgment that primitive family life was relatively less stable than at present. In only a few tribes is the marriage bond indissoluble. In a majority divorce is informal, a matter of personal discretion of either or both parties, and easy to consummate. In a minority of tribes divorce is subjected to specific conditions.

This informality of divorce covers much of what some anthropologists have observed as trial unions and exchanging of wives. Peary, for example, said of the Eskimos that trial marriage is "an ineradicable custom." Rasmussen found wife exchange common among Greenlanders. Among the Nicobar Islanders and the Dyaks of Borneo, Man reports that many husbands change their wives three or more times "before finding a partner with whom they are willing to pass the remainder of their days." And among the Bontoc Igorots Jenks says there were no women who had not entered into the trial union, for the girls segregated dormitory, *olag*, deliberately fostered this practice.

In structure the primitive family is much looser than our own. Close family feeling is frequently weak. Affec-

tion is not absent; indeed it is quite common between parents and children. But the "personal affection" basis which some sociologists ascribe in increasing degree to the present-day western family is less important among primitive peoples. They consider the economic and reproductive functions as more significant. That is, the origin of the family may be traced to the necessities of infancy and the food quest rather than to the pleasures of marital comradeship. The question of family solidarity and stability really reduces to the importance placed upon the family as a social unit in primitive life. The emphasis upon parent-child or husband-wife relationship varies with the total cultural situation. Or, put it in another way, the rôle of the family and therefore its unity and coherence, depends upon the "division of labor" between the several competing social institutions in any given tribe.

It must be remembered that even under a patriarchal system the family is not the sole social unit of organization. The hunting group, age group, religious group and others modify the biological and economic hold of the family upon its members. Frequently the younger males of a tribe eat and sleep in a "men's house" away from their immediate families; in some African tribes unmarried girls do likewise. Among the Dravidian tribes of India both men and women have separate secret society houses where they sleep. In some tribes religious or vocational instruction is given within the family; in others by outsiders, particularly in the formal initiation ceremonies for both boys and girls. In some tribes the economic unit transcends the individual family. The classificatory or totemic system, and in general the less precise notions of relationship among primitive peoples made for a broader and by the same token looser system than the modern family pattern.

This raises the question of how kinship and relationship are reckoned on the primitive level. Let it be clearly

understood that a method of tracing kinship is not synonymous with incidence or possession of power. Matrilineal kinship by no means signifies matriarchate, "woman rule." We must also distinguish between kinship and relationship in primitive thought. As we look back upon that level, kinship was conventional, relationship natural; hence frequently a group tie took precedence over what we should think of as the natural obvious tie of consanguinity; for "kinship is sociological, consanguinity physiological." If the modern mind insists upon reducing the whole matter to terms of blood relationship, we should have to say that primitive thought accepted a more general, superficial and extensive blood-sense than we do; that it was rather a mystic, magical, speculative view than a rigid scientific physiological view; and that the idea of strict consanguinity developed out of an earlier more general notion of affinity.

Physiological ignorance of the processes of reproduction, and particularly the father's share in procreation, still exists among primitive tribes such as the Trobriand Islanders. It is not hard to conceive of a time when this ignorance was the rule. Hence we may posit as an early stage the recognition of kinship "by circumstance." Succeeding this, would normally appear kinship by blood with the mother, by fiction or convention with the father. This paternal relationship might be achieved by adoption or magical rites. One explanation of the *couvade* interprets it as an attempt artificially to establish the father's connection with his offspring. Under the patriarchal, patrilineal system, still dominant, the child was considered as related to his father by blood, to his mother more or less by tolerance. But these methods of reckoning kinship are not always separated or exclusive. For example, the Zuni are matrilineal, most African tribes patrilineal; but in certain parts of Australia and in the New Hebrides the two systems are combined. Variations in emphasis upon the systems pro-

duce many variations of kinship pattern as in Samoa, West Africa and among the Trobrianders.

The method by which valid marriage is signalized has become in modern society a highly important factor in determining social status. Was it so in primitive society? Simplicity and informality seem to have marked early marriage procedure. But no uniform pattern held. Magic and religious forms were sometimes invoked. The tribal taboos must be observed. Frequently tokens or property of value were exchanged. Sometimes pre-marital intercourse was permitted as a mark of intention or as a fertility test. Initiation ceremonies often included something by way of instruction for marriage and domestic life. Marriage usually confers superior social status upon both sexes, therefore is sought. In general only the defective or notoriously unattractive remain unmarried. Marriage occurs early, sometimes shortly after nubility.

Can a progressive evolution in the direction of stricter sex mores be demonstrated? Here again evidence is conflicting. Some primitive tribes punish adultery with savage severity. But in general adultery is condonable as an economic tort. Pre-marital chastity is practically unknown, nor even conceived among lower peoples. While prostitution is sometimes encountered it is rather sporadic, and scarcely necessary; hence there is no special professional class of prostitutes; homosexuality and sexual perversions are not common.

No set pattern for the division of labor between the sexes has ever been discovered for primitive family life. And the reason is obvious, namely, that every tribal culture is the total adjustment to some environmental situation and to a set of social traditions. In each tribe certain occupations are the exclusive right or obligation of either man or woman and taboo to the others. Ordinarily war, hunting, herding, trade, and metal work are male occupations.

Cooking, small garden work, mat making fall to the woman. Child care is sometimes shared by both parents. Sympathetic magic and sex taboos frequently disturb what the modern mind might conceive as a rational division of labor. The relative share of burdensome work allotted to men and women varies from tribe to tribe. Women in Africa seem to have the heavy end and least interesting jobs. Among the Trobriand Islanders, on the other hand, men appear to do the heavier and more monotonous work.

There is no universal pattern for sex division of property between members of a primitive family, if for no other reason than that the word primitive or pre-literate must do duty for thousands of tribes scattered over millennia and continents. But each tribe has a definite custom covering this matter. Certain kinds of property are reserved for each sex, particularly where such property is conceived of as in some way intimately partaking of or related to the possessor's personality or sense of self. The looseness of the family tie and the diffused nature of the sense of relationship frequently prevents anything corresponding to what nowadays would be termed collective or community property as between husband and wife. The Trobrianders illustrate this point, for with them a man's property, rank, and rights descend to him from his mother's brother; his economic obligations extend not to his wife but to his sisters, to whom he furnishes food even after their marriage; while he and his wife depend for food upon the wife's brothers or male kinsmen.

Of the status and treatment of children on the primitive level it is possible to speak with considerable assurance. Children are usually welcomed as property and for themselves. Although crude methods of abortion or contraception (by mutilation and otherwise) are not unknown, fertility charms are more common. Savage parents are ordinarily affectionate and attached to their children, although the methods of showing

this devotion are not necessarily to the child's best interest. The resultant "spoiling" is eliminated by other forces for social control. Mortuary customs, mythology and folk lore bespeak this affection even if it be not entirely rational. Yet examples of cruelty, indifference, abuse and exploitation are reported from all over the primitive world. Apparently primitive fathers and mothers were not of an entirely different order from modern parents.

This difference must be noted, however, that for whatever reason primitive parents seem to be more easily disposed to give away their offspring. This aspect of the *patria potestas* has scant hold in civilized *mores*. Because of abysmal ignorance of child hygiene the infant and child mortality rates are abnormally high among primitive tribes, even among such advanced peoples as the Bontoc Igorot, Yakuts, Kavirondo, or Nicobarese. This "natural" decimation has at times been reinforced by cannibalism practiced upon children. But the primitive population budget was more often balanced by infanticide of both the abnormal (deformed, "unfit," sometimes twins), and the normal, or by elimination of the aged. Illegitimate children are sometimes killed, sometimes adopted by kinsfolk, but carry more or less stigma, depending upon how close the family tie is and how strict the marriage bond. Usually the child is put to work at an early age for his economic contribution and also for his vocational education. Indeed on the primitive level most child education is informal, carried on by parents, initiation ceremonies, tribal elders. Often puberty is the occasion for special ceremonies; sometimes children at puberty are segregated in special sleeping quarters away from their families. On the whole, the primitive family was biological and economic rather than expressly educational in function.

The "broken family" is a familiar contemporary social work problem. It has its analogies in primitive life. Primitive men and women sometimes

desert their mates, who usually return to their respective families. The divorced ordinarily remarry. But the lot of widows is uncertain. After more or less rigorous and protracted periods of mourning they may in some tribes remarry; in others they must be taken over by the deceased husband's brother; elsewhere they may live in a sort of limbo with their kinsmen. Where demonology is aggressively in evidence widows are "dangerous" because of the supposed jealousy of the husband's ghost. The widower's position is less hedged about with difficulty.

One final question remains, namely, is the family the primordial cell out of which human society has developed? The weight of anthropological authority at present seems to accept "the biological group, with primary emphasis upon the parent-child relationship, as the chief point of reference in any discussion of social organization," but clearly recognizes the importance of other organization patterns in primitive society. Without lapsing into the old controversy whether horde or family came first in social evolution, we can safely conclude that while the extension of the family sometimes formed tribal units; while sometimes the family (notably the patriarchy) seems coterminous with the economic, political, juridic and religious organization; while the family has contributed certain attitudes and qualities necessary for other social groupings; nevertheless in almost every known case the family occupies only one sector of the field of primitive social interests, activities, and organization. Therefore it can be set down as only one, though possibly the most important factor in the evolution of human society.

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FASCINUM, the ancient belief (still prevalent) that those individuals who possess the evil eye are capable of fascinating, rendering helpless and injuring their victims by looking at them. To avert the baleful influence, amulets were employed, the most common being the

phallus. Protective figures of the male organs of generation were placed on hearths and in gardens, often in the form of a satyr with the phallus erect.

FAX, the torch carried by females in the Bacchanalian processions. In ancient art, Hymen, the young god of marriage, is always represented with the bridal torch (*fax nuptialis*) in his hands.

FEBRIS AMATORIA, love fever, an old name for chlorosis. The condition was associated with the melancholy of love, and it was believed the chlorosis of passionate virgins would disappear in the marriage bed. Another name for chlorosis was the virginal disease (*morbis virgineus*).

FERTILITY AND INFERTILITY
[THE DETERMINATION OF HUMAN FERTILITY AND INFERTILITY].

Although the subject of human sterility has been taken up from the general standpoint in another part of this *ENCYCLOPEDIA* [see *STERILITY IN THE MALE AND FEMALE (SUPPLEMENT)*], there are still many points of modern research which must be considered in detail before a clear picture of this enormous and very complicated field is possible. And such a clear picture is an absolute *sine qua non* in all those cases where the more usual and more easily determined causes of sterility are not found.

First of all, it is necessary to stress the fact that fertility and sterility are not separate and opposed entities. Actual sterility, that is, the absolute inability to procreate offspring, is usually a rather simple problem as far as diagnosis is concerned, since it is based on such easily determinable conditions as absence of uterus or vagina, closed Fallopian tubes or vasa deferentia, absence of ovaries or testes or utter lack of spermatogenesis.

Between such complete sterility and the ideal 100 per cent. fertility there are of course innumerable gradations. Many cases of so-called sterility, that is, involuntary childlessness of married couples, thus are not true cases of sterility at all, but only disturbed fertility of sufficient intensity to prevent the occurrence or the development of pregnancy. I advisedly say the occurrence

and development of pregnancy, because many women who consult the physician because they do not conceive, in reality conceive quite frequently, but the products of gestation do not develop and early abortions occur which the patients consider to be simply delayed menstrual periods.

It must be emphasized that many women whose period is at times delayed a week or ten days have really such very early interruptions of gestation. This is especially so when the menstrual periods in this same patient are otherwise regular. Thus actual sterility and clinical sterility are not the same, but represent different gradations of disturbed fertility. Starting with a woman who actually does not conceive, we have next the woman whose ovum is fertilized but is prevented from nidation, then the woman whose ovum is nidated but dies at a very early stage, and so on until we have women who have prematurely borne, non-viable infants, or dead children, even at maturity. Clinically all such cases lead to the same result: childlessness of the couple. Essentially there is however a big difference in these various cases which is completely explained by the axiom "it takes two to make a baby," when this self-evident fact is interpreted in its widest sense.

In other words, the fertility of either the man or the woman cannot be considered alone, but only in conjunction with that of the sexual partner. Furthermore, the fertility of the couple is not the sum, but the product of the fertility of the husband and wife. Thus an ideal fertility of 10 for each partner would make an ideally 100 per cent. fertile couple, which actually of course does not exist. If both partners have a fertility value of 9, the resulting fecundity of the couple would be 81 per cent. When this numerical product sinks below 60 my experience has shown that *clinically* sterility will be present. However, just as the number 60 itself may be the product of 10 and 6, or $7\frac{1}{2}$ and 8, etc., so also may one sex part-

ner make up to a certain extent for the deficiencies of the other, provided these are not too marked. Thus once again we come to the adage that "it takes two to make a baby," and must draw the logical conclusions that deficiencies of fertility in either partner are equally important and that failure of the woman to conceive, or the interruption of pregnancy early or late, may be her fault or the fault of her husband. This rôle of the male in the production of abortions has been neglected almost entirely in human medicine, although the veterinarians have long taken it into account. Since a normal foetus must be the result of the union of a normal spermatozoon with a normal ovum it is ridiculous to deny the very important rôle of the male in the production of interruptions of pregnancy.

It is only natural, however, that the less marked disturbances of fertility resulting not in failure of conception but in inability to continue the pregnancy are not so easily evaluated as the factors producing actual sterility. After what has been said it is easily explainable why (leaving aside, of course, the question of contraceptives) the wife of a particular man might fail to conceive, a second wife have early abortions, whereas a third marriage of this same man might result in perfectly normal offspring, and the two former wives also have children in subsequent marriages. Thus the inability of a couple to achieve offspring does not mean that both or either one of the two are actually sterile.

Such cases formerly were very mystifying and gave rise to various theoretical conjectures which were grouped together under the term "obscure causes of sterility." First and foremost here was the so-called "relative sterility," which I prefer to call "selective fertility," since a man or woman may have children only with certain selected sex partners. The true explanation of such cases has already been given above. One of the actual causes for such selective fertility may, for instance, lie in the uterine cervical

secretions which, if thick and tenacious, may prevent less active and viable sperms from penetrating, whereas more capable ones may be able to reach the ovum.

It must be said here that purulent secretions, erosions of the cervix, etc., in themselves have no chemical effect on the spermatozoa, as I have been able to show time and again. It is only a question of mechanical blocking of the cervical canal by the thick mucus or mucus-pus. Kurzrock and Miller have reported that cervical mucus is dissolved by seminal fluid, but they found that different semens affected different cervical mucus specimens differently. This would mean, then, that a biological sterility is present in some cases due to incompatibility of the sexual partners based on the insolubility of a particular cervical mucus in a particular semen.

The actual existence of such particularization would, however, be most astounding, as it would make the procreation of the species dependent on chance combinations of certain sex partners. In view of the fact that all the known human races not only are fertile with one another, but actually produce fertile offspring, the assumption that chance matings would play such an important rôle in the continuation of the species seemed to me highly illogical.

I was able to show experimentally that the solubility of cervical mucus in semen varied with the time of the menstrual cycle. The solubility was greatest around the middle of the menstrual interval (time of ovulation) and decreased from then on up to the time of the menstrual bleeding. Since the publication of my article on this subject (Moench, 56) a number of veterinarians have informed me that they also have noticed differences of fluidity in the cervical mucus in cows and bitches, and that these differences in fluidity varied with the stage of the oestrous cycle (that is, they again were related to ovulation). The solubility of the cervical mucus, or its fluidity,

may therefore be considered as more or less of an indicator of the time of ovulation and with more refined technique it may perhaps be possible to determine the time of ovulation from the cervical secretions. It is evident, therefore, that any compatibility test evaluating the action of the sperms in the cervical mucus must take into consideration the time of the menstrual cycle of the woman.

As far as the other so-called obscure causes of sterility are concerned, they can be disposed of very briefly. They can be classified under the following headings:

1. Difference in the blood groups of the two sex partners.
2. Vaginal acidity.
3. Sperma immunity.
4. Uterine irritability.
5. Psychic causes.

Number one is a sample of an *ex cathedra* theory which like Athena sprang fully developed from its progenitor's head. Unfortunately, or fortunately for the human race, it is as great a myth as Athena herself. We need waste no time on it.

Vaginal acidity enjoyed a great vogue for a while. A drop of semen and a drop of vaginal secretion were mixed, and if the sperms stopped moving in a short time, there was sexual incompatibility. We will see later that there are so many pitfalls in judging sperm motility that such tests mean nothing at all in the hands of the average physician and very little even in the hands of laboratory men. Besides the proportions of one drop of semen to one drop of vaginal secretion are all wrong. The normal ejaculate far exceeds the amount of normal vaginal secretion and in cases of excess vaginal secretion the acidity normally present is always lowered.

Furthermore, the acidity of the vagina would be reduced in every case by the introduced semen. Even before this, however, intercourse itself, as I have been able to prove, reduces vaginal acidity by carrying into the vagina

on the male organ a fair amount of the alkaline secretion of Bartholin's glands.

Again the semen is deposited in the least acid, upper part of the vagina. Aside from all these points, however, there is the important fact that the normal vaginal acidity only amounts to about 0.5 per cent. lactic acid and this acidity does not kill spermatozoa, at least not for a number of hours. The normal sperm, however, remains in this acid vaginal medium only a few minutes. Another fact worth mentioning here is that Gräfenberg has found decreased vaginal acidity to be present around the time of ovulation. And this of course is the only time at which vaginal acidity could ever possibly be of any importance at all, since to-day it is definitely established that the ovum lives only a very short time after leaving the follicle of the ovary and can be fertilized by the spermatozoa for only six or at most twelve hours (Hammond, Marshall, Knaus, Ogino).

Sperma immunity also has captured the imagination. It was claimed that the female could be sterilized only by the intramuscular injection of homologous sperm suspensions, but then equally strong claims were made for exactly the opposite and success reported only with heterologous sperm injections. As a matter of fact, the whole matter apparently rests on the parental introduction of a protein and is not a specific reaction at all. This interpretation is further borne out by experiments with marine animals.

Uterine irritability is another cause of sterility which has been proposed. It was assumed that the uterus of some women was so irritable that it expelled the semen. It was found, for example, that some strips of uterine muscle suspended in Ringer's solution promptly contracted when semen was added to the medium, whereas muscle strips from other uteri did not. Now Knaus has shown that in the presence of a corpus luteum the uterine muscle does not react to posterior pituitary extract while

it does do so up to the time of ovulation, and Knaus has even been able to use this procedure to determine the time of ovulation. So any experiments dealing with the irritability of uterine muscle must take the time of the menstrual cycle into account. Otherwise such observed changes in uterine muscle response may be only part and parcel of a normal cyclical variation.

Again, the semen itself does not enter the uterus, but only the sperms and that these small cells should cause uterine contractions is extremely hard to believe. Certainly the originators of this theory of sterility are saddled with the proof of it. So far this proof has not been brought. Altogether I would say such a cause of sterility is extremely improbable and the assumption of its existence illogical for the reasons stated before.

Psychic causes may, by way of endocrine disturbances, etc., certainly be the cause of sterility but a direct action is to be denied. Cases of pregnancy following rape, etc., amply support this statement.

I have discussed these points as briefly as possible with the idea of giving a general review of the subject. The reader who would want more details is referred to my previous work and the literature quoted there.

If then these various so-called obscure factors, with the exception of cervical obstruction, are not capable of explaining sterility in couples where the usual causes of childlessness are not to be found, we have left only one other cause; namely germ-plasm defects and here to my mind is the great fundamental basis of all disturbances of fertility. Germ plasm defects may be congenital or acquired. Focal or general disease, improper mode of living, deficient diet, obesity, lack of exercise and overwork, emotional disturbances through action on other organ systems, endocrine imbalances, over-indulgence in tobacco, alcohol and excessive coitus may all lead to impairment

of gonadal function directly or indirectly.

Naturally the same causes will not produce the same results in every individual. One couple may have intercourse every day and have a number of normal children, whereas in another couple intercourse twice a week may be excessive. Obesity may not prevent the procreation of normal children in one marriage, but may be the one factor involved in another union. It depends, of course, entirely on the original fertility present. Obesity unquestionably reduces fertility but if the latter was sufficiently high originally it still may remain well above the point where clinical sterility would supervene, and thus, judging purely by analogy, the superficial observer might say sterility has nothing to do with obesity, since such and such an obese couple has many children.

Diet unquestionably also affects fertility, but one must be very cautious in transferring experiments on laboratory animals to human beings. Very rarely, indeed, will one find in humans a diet sufficiently defective to produce disturbances of fertility. Witness the fact that the poor and mostly undernourished couples have the most children. On the other hand, deficiencies of diet during adolescence may very easily lead to hypoplasia genitalis and thus to at least lowered fertility. The privations during the war in the central European countries have furnished ample proof of this fact.

It is essential therefore in every case of sterility to evaluate the history, breeding record, habits, diet, etc., in order to determine whether or not a germ plasm defect exists and if it does, whether it is congenital or acquired, and if the latter, what its cause may be so as to be able to institute treatment accordingly. In the woman it is unfortunately not possible to examine the sex cells themselves so that we have to depend on the physical indicators of the normal action of the complicated female sexual apparatus.

In general, we can safely say that a woman with normal external genitals, normal secretions, normal palpatory findings as regards uterus, tubes and ovaries, who menstruates regularly and normally, produces normal ova, especially if on curettage the histological picture of the endometrium agrees with the clinical menstrual cycle. The menstrual cycle is an extremely sensitive indicator in many ways and local and general disease and psychic disturbances may upset it, thus immediately pointing out to the physician that he is dealing with an imbalance of some sort.

The vast importance of the endocrine system of course must be stressed, but I will not go into details here, as endocrine imbalances generally are easily recognizable, even though their exact nature may be hard to determine, and treatment may be even more difficult. Furthermore, the subject of the endocrines is discussed by others in this *ENCYCLOPAEDIA*. Again I can the more readily leave out the discussion of the endocrine system here since my whole purpose is to show what causes of sterility must be sought for when ordinary routine examination shows none of the usual major abnormalities, defects or lesions or disturbances under which endocrine disturbances of menstruation would of course fail.

Reverting again to the bald statement that "it takes two to make a baby" we must, should we find no cause for the infertility in the woman, turn to the man. By this statement, however, I do not mean to imply that the cause in such cases must inevitably lie with the man and that we are so well versed in all the problems of sterility that we can in every case bring to light every hidden cause present in any woman. Unfortunately many points in the large problem of disturbed fertility still remain to be solved. Again the purely literary division of this article into the female and male problems does not mean that we must carry out all the various tests on the woman first.

On the contrary, after a simple physical examination of the woman, no further tests should be done on her until the fertility of the husband has been established definitely. When this harmless examination has been completely and satisfactorily finished and the man proven to be fertile by all methods of examination at our disposal, then and then only should an insufflation test of the Fallopian tubes and any other procedure indicated be carried out on the wife. After all, if the husband is sterile, what does the patency or non-patency of the Fallopian tubes of the wife matter?

In order to determine the fertility of the male the most important procedure is of course the examination of the semen carried out in a proper manner and in detail. Naturally a general and searching anamnesis and a general physical examination must also be done since, if any disturbances of fertility are found, the history and physical findings may, and often do, indicate the cause of such defects and also thus the treatment to be pursued. In the physical examination of the male one or two points need stressing. Atrophic testes of course mean sterility but otherwise the size of the genitals is no indicator of the fertility of the individual. Far more important than size is the consistency of the gonads. Normally the organs should be tense and firm. Softened testes, lacking in tone, always denote disturbed spermatogenesis. It must, however, be emphasized that disturbed spermatogenesis may be present even when the size and consistency of the testes are normal.

Unfortunately the examination of the male has been until recently very much neglected and the woman indiscriminately blamed for every childless marriage. Often the husband was not examined at all but even if he was the examination was cursory and often meaningless. All that was required of the man was that he have a fair number of motile sperms in the semen ejaculate. No consideration was given to any abnormalities of the sperm cells nor to the length of time the sperms remained motile, nor in most cases was any attention paid to the type or degree of motility seen under the microscope.

Based on work done on bulls by Williams and Savage, I was able to show that the morphology and biometrics of human sperm cells could be used as an indicator of fertility and that even the presence of many actively motile spermatozoa in an ejaculate did not absolve the man in question as a possible factor in the childlessness of the particular couple.

The semen examination as evolved by me consists of the following:

A. ANAMNESIS OF THE SEMINAL SPECIMEN:

1. Age of the specimen in hours or minutes.
2. Date of the last previous intercourse and frequency of intercourse in general.
3. How the specimen was obtained: coitus, friction, massage of seminal vesicles; also how the semen was kept until the time of examination; type of condom, etc.

B. MACROSCOPIC EXAMINATION OF THE SEMEN:

1. Quantity.
2. Turbidity.
3. Viscosity.
4. Foreign bodies or abnormal ingredients, pus, blood, powder from condom, etc.

C. MICROSCOPIC EXAMINATION (FRESH SPECIMEN):

1. Examination of the sperms:
 - a. Number of the sperms
 - b. Characteristics of the sperms
 - c. Motility and duration of motility
 - d. Abnormal forms.

D. MICROSCOPIC EXAMINATION (STAINED SMEARS):

1. Morphological count.
2. Biometric determinations.

E. CORRELATION OF THE VARIOUS LABORATORY AND CLINICAL DATA.

This may seem to be a tremendously complicated method of examination, but there is good reason for every single heading in this listing.

Before going into the details of this method of semen examination, it may be profitable to describe in as few words as possible the modern conception of the development and life of the spermatozoon. These cells develop from the spermatogonia in the testis by way of the spermatocytes and spermatids. The centrosomes become the anterior and posterior end knobs situated in the posterior end of the sperm head. From the posterior end knob a filament, the later tail, develops which acquires an end ring at the point where the tail penetrates the lining membrane of the original cell. The protoplasm of the cell forms the body of the sperm and the rest of it is cast off in the process of maturation of the spermatozoon. My own investigations, especially my microdissection studies, have caused me to be-

lieve that the head of the sperm is made up only of nuclear material, although this point is not definitely settled.

The nucleus of any cell contains a certain definite number of chromosomes characteristic for the species. In the human race these are supposed to number 48. In the ovum and the spermatozoon 46 of the 48 chromosomes are general body chromosomes (autosomes), but the other two are the sex chromosomes. For reasons which it would lead too far to go into here, it is considered as certain that all the ova are alike, but that the spermatozoa are of two different types, one producing males, and the other females.

It used to be thought that slightly more than half of the sperms had a single sex or y-chromosome, which in conjunction with the sex chromosome of the ovum produced males. Therefore it was expected that spermatozoa of two different sizes were present in the semen. Some authors have claimed to have found this to be the case, since measurements of the sperm heads were said to produce a bimodal, that is, double peaked graph. My own careful biometrical studies have shown that these bimodal graphs were the result of faulty technique and that a strictly monomodal graph is obtained in every normal semen specimen when the head lengths of the sperms are carefully measured and plotted.¹ The conception of a single sex chromosome therefore was not probable and today we believe that the ovum and sperm each have their requisite number of chromosomes (46 and 2 sex chromosomes). In the case of the ovum both of the sex chromosomes are of the x type whereas in the sperm one of these chromosomes is of the x type and the other of the y type. When the necessary reduction of the chromosomes of the ovum and sperm cell occurs (that is when by two cell divisions closely following one another) the chromosomes are reduced from 48 to 24 so as to produce by the

fertilization of the ovum a normal cell with 48 chromosomes, either the x or the y half of the sperm cell may be lost. Thus either the combination x, x (female) or x, y (male) may be produced in the fertilized ovum.

Space will not permit me to elaborate on this most interesting and extremely complicated mechanism. For the present paper, furthermore, which deals not with the anomalies of the zygote but with disturbed fertility, the above brief and rather rude description will suffice to give an idea of modern conceptions of the nature of the ova and spermatozoa.

When the sperm is first produced in the testes and becomes free in the tubules it is not yet mature. Motility is slight, but present. Gradually as the sperm cell moves to the tail of the epididymis through the complicated tubule system of the rete and epididymis it matures and its motility increases until the spermatozoon reaches the great reservoir for these cells, the tail of the epididymis. Here the sperm cells lose most of their motility due to a lack of oxygen since they are closely packed in a tube whose diameter is very large compared to the diameter of the sperms.

In addition, a certain amount of the diminution of motility of the sperms at this site is due to the specific secretions of the mucous membrane of the epididymis itself (von Lanz). Furthermore the temperature of the scrotum, 2.7° C.—7.8° C. (Harrenstein) lower than the general human body temperature, aids in decreasing sperm motility. I will have more to say about this last point later on. The loss of motility on the part of the sperm in the tail of the epididymis must be considered a conservative measure since the sperms, like a storage battery, have only a definite, given amount of energy which must be conserved until needed to traverse the passages of the female sexual apparatus and fertilize the ovum.

In the tail of the epididymis and the ampulla of the vas the sperms remain alive and capable of fertilization for at least a number of weeks. Their motility will last even longer but motility itself

¹ For further details see Moench 34, 35, 41, 48.

must not be considered as identical with power of fertilization. The latter is lost long before motility, in fact abnormal cells incapable of fertilizing the ovum at any stage of their development may have good motility.

Since the sperms have a given amount of energy their span of life, that is, the duration of motility and fertilizing power, gradually becomes shortened the more mature a spermatozoon is; thus the sperms in the tail of the epididymis have a shorter span of life when taken out of the body than those higher up in the tube system of the male gonad. As the reinforcements of sperms newly produced in the testes proceed to the epididymis and as the older sperms from the tail of the epididymis gradually are discarded and reach the intra-abdominal portion of the vas deferens and the seminal vesicles, whence they are either ejaculated or lost with the urine or on defecation, or destroyed.

It must be emphasized here, however, that the fate of these sperms is of no importance anyway since they are only the old cast-off sex cells no longer of any value for fertilization purposes. This modern view is of course radically different from the views formerly held that the seminal vesicles were the reservoirs for the spermatozoa. That the seminal vesicles are, however, only the graveyard, so to speak, of the sperms is shown in many ways which cannot all be taken up here, but especially by the fact that the spermatozoa of all animals with extraabdominal testes will not live more than a few days at the most at body temperature. The work of many men has proven this fact conclusively. Redenz, Hammond and Asdell, Young, White, Moore, Benoit and others have shown that in the epididymis the sperms are capable of retaining their fertilizing power for 21 days (rat), 38 days (rabbit), 25 to 30 days (guinea pig), and their motility at times for twice this period. It was also shown (Benoit, Moore, von Lanz) that it is the testicular hormone which causes the sperms to

mature and maintains them in a state of fertility for weeks.

However, if the testes were subjected to body temperature by transplanting them into the abdomen or even by wrapping the scrotum in impermeable coverings or by keeping a small animal in an incubator at body temperature all the spermatozoa died in about four days and there was a severe degeneration of the spermatogenic cells. (This explains the sterility always present in cases of cryptorchism.) If the elevation of temperature was of relatively short duration the spermatogenetic cells might be severely damaged, whereas the spermatozoa in the tail of the epididymis might survive the assault. Thus the animal would become sterile several weeks later, that is, when the sperms in the epididymis had been ejaculated or had died off.

Unless the destruction of the testicular epithelium had progressed too far, due to too great or too long a degree of heat, regeneration of the spermatogenic cells occurred after a time (Moore and Oslund, Crew, Fukui, Young, Hart and many others). I myself was able to show by repeated experiments that, irrespective of the medium, ejaculated spermatozoa all died within 18 hours if kept in an incubator at body temperature. The question then naturally arises what is the optimum temperature for preserving spermatozoa. Outside of the body I obtained the best results by temperatures around 10° C. This agrees closely with the findings in the literature. Furthermore, subjecting an animal to severe cold will not affect spermatogenesis deleteriously. In fact, in some cases an increase of spermatogenesis instead of a decrease has been observed.

It may seem paradoxical that the spermatozoa of warm-blooded animals remain alive longest at temperatures so far below body temperature. However, we must understand that the activity of the sperms on ejaculation is due to a chemical (abundant supply of oxygen) and a thermal change. At low tempera-

tures, therefore, especially if oxygen is excluded as much as possible, the sperms are more or less narcotized and thus retain their given potential energy for a longer time than under conditions which allow of active motion. Saturation of the semen with carbon dioxide will also, as I have been able to prove to myself, temporarily immobilize the sperms.

Taking all these various points into consideration it becomes evident that the scrotum has a definite heat-regulating function. By means of the dartos the testes are brought nearer to the body and their temperature raised if the environment has a low temperature, whereas a high surrounding temperature will cause relaxation of the dartos and allow the testes to move away from the body and remain cooler.

It at once becomes evident that overheating the testes, as occurs in some occupations, such as those of firemen on ships, miners in very hot mines, etc., will at least reduce fertility and possibly even produce sterility. Even the wearing of a suspensory is bound to have a certain ill effect, as it robs the scrotum of its heat regulating mechanism. This is especially true when such a suspensory is worn during violent exercise. Roemmele, for instance, describes the increasing flaccidity of the scrotum with progressing descent of the testes away from the body in stallions which are worked hard.

After this brief description of the factors involved in spermatogenesis we can now go back to the various headings I have set up for the examination of the semen.

It is evident that it is of the greatest importance to know the age of the specimen which is received for examination. The date of the last previous intercourse and the general frequency of intercourse naturally also are very important. Intercourse repeated a number of times in the course of a few hours frequently will reduce the number of sperms to almost zero and even intercourse much oftener than twice a week has caused a reduction in the number

of spermatozoa in every case I have seen.

It is also evident from what has been said of the seminal vesicles that specimens obtained by massage will in the vast majority of instances not allow of an evaluation of the semen. However, whether ejaculation is produced by coitus or by manipulation is of no consequence. Incomplete orgasm, however, must be taken into account and inquired about. It is further important not to keep the specimen in the condom, if one is used, since often a deleterious effect is exerted by the chemicals in the rubber or the water used in putting on a skin type of cover. The best way is to immediately have the condom snipped at its lower end and to allow the semen to run into a clean glass container.

Another point to make sure of is that the semen specimen has not been warmed. Aside from the effect of too great heat being incautiously used, even body temperature is disadvantageous, as has been explained. The much praised method, therefore, of twisting the end of the condom or tying it off and leaving it in the vagina is bad.

In the microscopic examination of the semen the quantity is important. The less the quantity of semen, the more external influences will affect it and again the less the amount, the less the number of sperms, other conditions remaining the same. In the normal case, the ejaculate should be about 4 c.c. The greatest amount I myself have ever seen has been 11 c.c. Increasing age will generally produce a gradual reduction in the volume of the ejaculate.

Turbidity of the semen must also be checked up. Congestion of the accessory genital glands may cause the production of relatively great amounts of secretion which will reduce the density of the sperm suspension which is a factor that must not be neglected. Increased turbidity again may indicate disturbances of the sexual apparatus and may be due to pus, etc. Care should be taken to recognize the rôle

of foreign bodies, powder from the condom, etc., in this connection. Viscosity, which is always marked in freshly ejaculated semen, decreased markedly in 5 to 15 minutes in a normal semen specimen. Continued marked viscosity again points to some disturbance in the sex glands and may prevent the full development of motility of the spermatozoa. Decreased viscosity is often found in excessively large ejaculates.

The object of the microscopic examination of course is to determine first, if spermatozoa are present and if they are motile; secondly, in what numbers, and thirdly, the character of the spermatozoa seen.

The normal semen specimen should show 25 to 50 cells per high power field of the microscope (number 2 ocular and number 6 objective). Even 20 to 30 cells per field are, however, I feel still within normal limits since, as I have stated before, a moderate oligospermia is perfectly compatible with normal clinical fertility, although it is of course self-evident that the fewer the total number of sperm cells, the less the chance of the ovum becoming fertilized from both a general and a mathematical standpoint.

However, an observed oligospermia or even azoospermia may be only a temporary condition and so represent a purely accidental finding. Thus with any abnormal specimen more than one sample should always be examined, paying due regard to the sex habits of the patient as mentioned before. In cases where very few or no spermatozoa are seen, it is profitable to centrifuge the specimen at high speed for about ten minutes because the difference between a few sperms and none at all often represents a most important differential diagnosis. It is important to know that in purely accidental oligospermia the number of abnormal sperms may or may not be high, whereas in permanent oligospermia the count of the abnormal forms is invariably high. The failure to take this last point into consideration makes most of the statements in the

literature about oligospermia and sterility of practically no value. Again those experiments carried out by diluting normal semen are open to grave doubt, because this method changes the normal medium of the spermatozoa.

Under "characteristics" of the spermatozoa are included all special peculiarities of the sperms in any particular semen, such as very large cells, or the opposite, coiled tails, immature forms, etc. Since these points will be taken up later in detail, further descriptions are not necessary here.

As simple as it may seem, the determination of the motility of the sperms in any given semen specimen offers very many pitfalls. It is evident that only an actively, progressively motile sperm can ever reach the ovum since it has a long road to travel over which it must go despite more or less inimical secretions and phagocytosis, which latter is supposed to increase the further the sperm travels upward (Popa and Marza). However, the microscopic slide is not the normal site for the sperms and sometimes almost imponderable accidents or changes of environment will change the microscopic picture of motility entirely.

From what has been said before it is of course evident that the semen should be kept cool up to the time of examination. Also all possible chemical action must be avoided. Despite this fact, however, false impressions are easily gained and unless a specimen is perfectly satisfactory as regards motility, judgment should be deferred until the examination has been repeated a number of times under carefully controlled conditions.

It sometimes happens that one drop from a semen specimen will show no motility whereas all the further drops do. This is hard to explain. Perhaps it is due to differences in oxidation in different parts of the semen sample, perhaps too, unbeknown to the examiner, some chemical on the pipette or loop will kill the first sperms but be washed

off before the instrument is used again. It is just another illustration of how easily altogether erroneous impressions may be gained unless constant vigilance is observed.

If one knows how long previously the sperms were ejaculated, it is of value to determine the length of time motility lasts, since sperms which all die in 10 to 15 minutes obviously will never be able to reach the ovum. Again however all safeguards against misinterpretations must be observed, and in addition one must not too literally interpret the time element, since semen specimens from clinically equally fertile men may show quite appreciable differences.

I do not believe it is safe to rely on the statement that immotile cells with straight tails were originally motile, whereas those with coiled tails were dead when ejaculated. It is easy to conceive of conditions which might straighten out the tails of even dead cells and I have been able to produce coiled tails experimentally in originally normally motile sperms (Moench, 35).

It can also be stated definitely to-day that the head of the spermatozoon does not expand or contract, though refraction may give this impression under the microscope. Again, the head of the spermatozoon does not determine the motility, except that giant heads cause a decrease of motility for purely mechanical reasons. Sperms, however, with pinpoint heads may be as actively motile as normal ones.

It is time also to end the myth of the "sniffing cells." These spermatozoa are simply slowed down in their motions and thus appear to be searching. If this slowing down is permanent the sperm is of no value for fertilization purposes, and if it is temporary then a moment later the cell will no longer be identifiable unless, as has often been claimed, it is larger than other sperms. If this is the case, the cell is abnormal and of no value, as will be shown in the discussion of the morphology of the semen.

Abnormal sperm forms should always be looked for in the fresh specimen as a check-up on the stained smears used later on. These abnormal forms will be taken up in detail under the heading of morphology of the semen. It is, however, necessary to add that I was able to prove that the morphology of a particular semen remains constant under the varying conditions of everyday life, with varying frequency of intercourse, etc. Only severe illness can rather suddenly, and old age gradually change the picture. Just how constant seminal morphology remains under ordinary conditions is shown by the fact that it is possible by comparing seminal smears to identify the individual (Moench, 54, 55). It is, of course, this constancy of the picture which alone makes a detailed examination of seminal morphology of so much value.

Although the morphology of the semen has been studied by many workers the conclusions drawn had always been that if a sufficient number of normal, actively motile cells were present, any observed abnormal sperm forms were of no consequence. It remained for Williams and Savage to show that the percentage of abnormal forms is an indicator of fertility in the bull, and I was able to show that the same is true in man. In other words, the number of palpably abnormal sperm cells indicates the degree of spermatogenic disturbance and when a high percentage of visibly abnormal spermatozoa is present, all the other sperm cells are also abnormal, even though we cannot appreciate this with our crude technique and instruments. All the various sperm abnormalities are, however, not of the same importance. In every semen examination therefore it is necessary to count and tabulate the normal and abnormal spermatozoa, paying especial attention to head changes, as these are the most important factor in determining the fertilizing value of the particular semen specimen (Figure I).

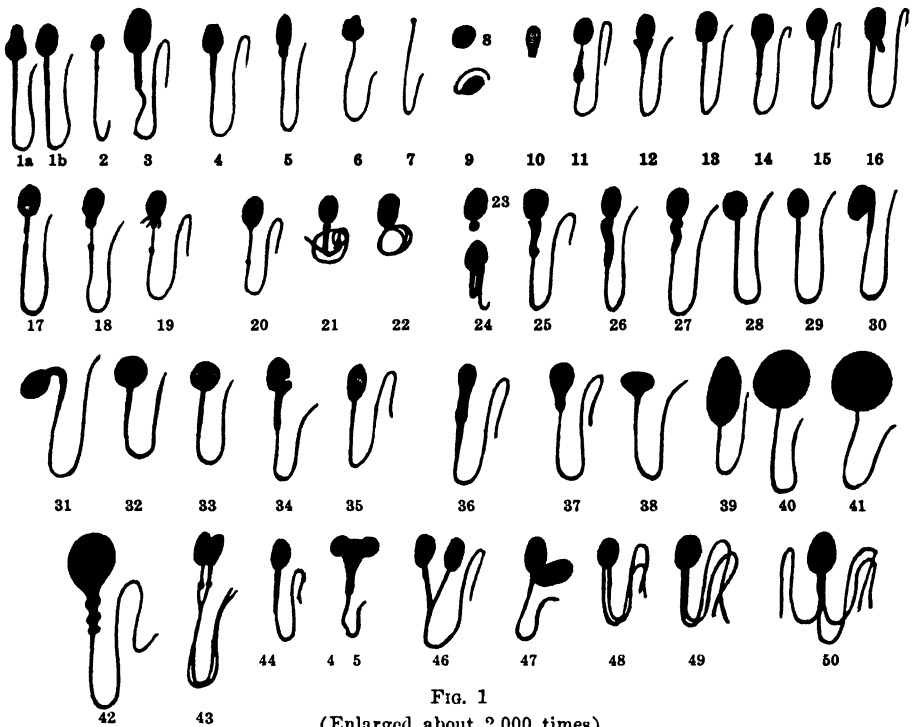


Fig. 1
(Enlarged about 2,000 times)

1a and 1b. Normal spermatozoa; 1a. Profile view, at times mistaken for an abnormal sperm cell. 2. Small sperm head. 3. Large sperm head. 4. Anterior end of head roughened. 5. Narrow cell with swelling of body. 6. Amorphous head. 7. Pinpoint head. 8 and 9. Undeveloped forms. 10. Phantom head. 11-20. Anomalies of the body. 21-24. Coiled tails. 21 also shows striations of head, and 23, an undeveloped tail. 25-27. Other body anomalies. 28. Split in capsule?. 30-31. Bent forms. 32-33. Round heads. 34-38. Various malformed heads. 39 and 40. Protoplasm not cast off. 41. "Puffball" sperm cell. 42. Giant immature cell. 43-50. Various double and triple forms, 44, with a double neck.

TABLE I

Tabulation of the cytology of a semen sample.			
Normal	370	Normal	370
Narrow	19	Abnormal	130
Small	30	Head	
Large	21	changes	79
Tapering	4	Body	
Overdevel-		changes	18
oped end-			
knobs	1		
Amorphous			
heads	4		
Cytoplasmic			
extrusions	0		
Naked body			
fibril	7		
Coiled	15		
Immature	11		
Thickened			
body	11		
Double			
forms	6		
Round cells	1		

It is self-evident that such detailed morphological studies of the semen are only possible with high magnification and thin, clear and well stained smears. Personally I have used a magnification of 1000 diameters. As a stain I employed a carbol fuchsin-eosin mixture with a counterstain of methylene blue (Moench, 45). This stain has given me better pictures than any other method I have used, nor have I seen any smears prepared by other methods which were as good. It is of course necessary to make sure that any staining technique employed does not cause changes in the sperm morphology. I can vouch for my method in this respect; only careless, faulty technique, overheating, etc., may lead to errors.

It is apparent that a proper evaluation of sperm morphology presupposes a thorough acquaintance with all the varieties of normal and abnormal sperm forms and their significance, just as is the case in any other line of morphological diagnosis. It must also be stressed that the form used in tabulating abnormal sperm

changes must not be too complicated, as otherwise the individual differences will be so insignificant that confusion will inevitably result. A classification such as is given in Table I has proven very satisfactory. A further subdivision of the classes, for instance, divid-

heads are not all of equal importance. If the narrow and tapering heads, for instance, together total 8 per cent. or more, disturbed fertility is present, even though the total number of abnormal sperm heads is not above 20 per cent. In the same way immature and double forms indicate spermatogenic disturbance. Thus the true evaluation of the seminal morphology found in any particular case requires experience. With such experience, however, it is possible to diagnose disturbed spermatogenesis when present.

On the other hand, it must be definitely understood that a normal seminal cytology does not necessarily exclude the man in question as a factor in the childlessness of the couple, since the biometrics of the sperm heads may still show aberrations indicative of decreased or absent fertility. This part of the semen

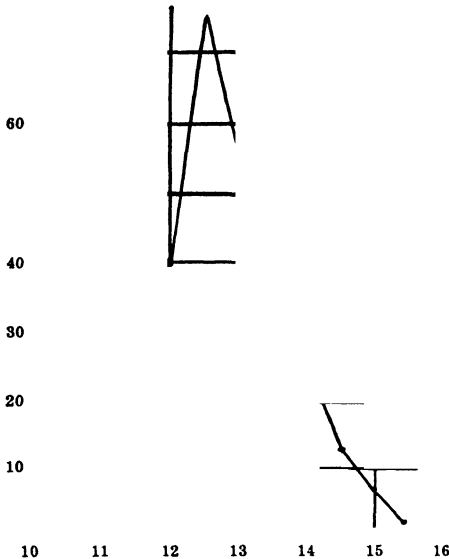


FIG. 2. GRAPH FROM A NORMALLY FERTILE MAN

Coefficient of variability $7.825 \pm .215$. In all the graphs the figures on the horizontal lines indicate mm., those on the verticals, the number of sperm heads of this particular size which were observed.

ing the small heads into narrow, tapering, round, etc., as logical as it may be theoretically, is practically not only useless but dangerous because of the great increase in the probability of error.

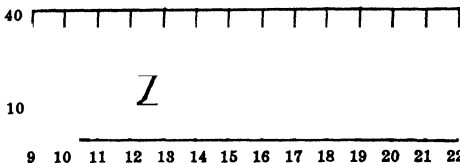


FIG. 3. GRAPH FROM A STERILE MAN
Coefficient of variability $13.809 \pm .380$.

My investigations have shown that when the percentage of abnormal heads is above 20 per cent. disturbed fertility is present, and when the abnormal forms reach 25 per cent. and more, clinical sterility at least is usually present. Of course the various forms of abnormal

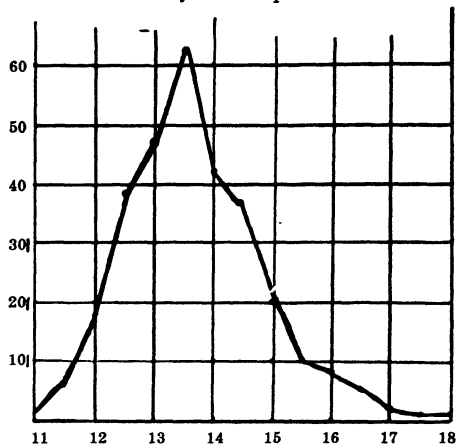


FIG. 4. SKEWED GRAPH FROM A VERY INFERTILE MAN

Skewness factor 5.62 times the probable error. This skewness was the only abnormal finding in the semen of this man. Both the cytology and the coefficient of variability were within normal limits. The Clinical history, however, proved that definitely disturbed fertility existed in the man in this case.

examination is accomplished by projecting the stained sperms onto a screen at a magnification of 3000 diameters and measuring 300 to 500 head lengths in $\frac{1}{2}$ mm. (Moench, 48, 49). From these measurements graphs are constructed as shown in Figures 2 and 3, and the functions of these graphs calculated. A coefficient of variability of 11.5 or more indicates disturbed spermatogenesis, since such a large figure can only be the result of marked size differences in the sperm heads. It might be thought that such size differences should be appreciated at the time of the morphological semen examination, but this is not the case, because of the lower magnification necessarily employed.

In some, relatively few cases, the skewness, or lopsidedness, of the graph when its value is greater than four times the probable error is also important and may indeed be the only abnormal finding (Figure 4). Offhand it might seem strange that such a skewness factor, the result entirely and alone of mathematical analysis of the distribution of the population of a particular semen, should be of value as an indicator of fertility. When we consider however that such skewness can be the result only of a relative excessive number of either small or large cells, and that such size distribution does not occur in normal cases, we see that definite importance must be attached to any unusual skewness of an obtained graph.

The last step in the semen examination is the correlation of all anamnestic, clinical, and laboratory data. The correctness of the diagnosis here of course depends on the correctness of the data used and the experience of the physician, and the same of course applies to an even greater extent to the final opinion of the physician regarding the underlying reasons for the childlessness of any particular married couple.

It is to be regretted that the described method of semen examination is so tedious, time-consuming and so specialistic that only specially trained workers can carry it out correctly. This is unfortunate, but I know of no way of simplifying it. Unless the examinations are done absolutely correctly they are not only a waste of time, but full of danger for the patient. Besides incorrect results would tend to cloud an issue which has now been firmly established, since examinations of this kind in man, the bull, the stallion, and the domestic cock have all resulted in entirely similar results, both from a laboratory and a clinical standpoint. Lagerlöf has also studied the morphologic changes in the gonads of about 100 bulls and found that there was a close interrelation between pathologic and gonadal conditions, seminal morphology and biometrics, and fertility.

It must be emphasized that the results in animals with this detailed method of semen examination are even more conclusive than those in human beings since the fertility of a bull or rooster can always be checked with a number of females, whereas in human couples intercourse is repeated again and again between the same two sexual partners, so that even couples of relatively low fertility may eventually achieve offspring. The number of times coitus is performed per achieved offspring is not reckoned with as in animal

husbandry. Besides in humans intercourse takes place at any time of the menstrual cycle, whereas the female of most animals will admit the male only during oestrus. The figures given in this paper as indicating the limits between normal and abnormal human sperm morphology and biometrics and which of their very nature can be but approximate, thus at times must appear even more inaccurate than they really are, unless all the abovementioned factors are taken into consideration. Nevertheless, despite these handicaps the detailed semen examination, even though time-consuming, is certainly worth while, since it will clear up, and has cleared up in my hands, many cases in which apparently there had been no reason present why the particular couples in question should not have offspring.

While this paper deals strictly only with the diagnosis of fertility and infertility, a few words on treatment may not be amiss. I will limit myself to just a few points. Fertility and general physical health are intimately associated; proper living, diet, exercise, hygiene, etc., are essentials for all couples desiring children. A basal metabolism determination is always valuable. The determination of the optimum coitus interval is also important. Again intercourse should be advised around the time of ovulation. Such advice must, however, not just be a general statement of this type, but must be specific for each couple.

If it is true that a woman ovulates but once a month, and there is no evidence whatsoever against this assumption, then it is self-evident that the only time during the menstrual cycle when pregnancy can occur is during the short period of time when a viable ovum and viable spermatozoon are present in the same portion of the female sexual passages. Consequently if the ovum lives but a few hours and the spermatozoa at the very utmost will not remain alive at body temperature for more than 48 hours, pregnancy can only follow a coi-

tus which takes place within two days of ovulation and on the day of ovulation. Despite some dissenting opinions the work of Ogino, Knaus and my own investigations have convinced me that this sharp limitation of the time fertilization of the ovum can occur is correct.

It is therefore necessary to determine exactly the time of ovulation. The work of Knaus has shown that the activity of the corpus luteum in normal women lasts 14 days, that is, ovulation occurs 15 days before the onset of the next menstrual period. Thus an exact knowledge of the menstrual cycle is essential to determine the day of ovulation. Observations have shown that there is probably no woman who menstruates at exactly equal intervals. Even women who believe they are absolutely regular will be found to vary from one to three days. The dates of ovulation will then fall on the days included by counting back 15 days from the shortest and longest menstrual interval and can only be determined by keeping an accurate record of the day of onset of menstruation for at least six months and preferably a year.

Thus if a woman during this period of a year menstruates at intervals of 26 to 29 days, the days of ovulation will be on the 11th to 14th day after the beginning of the last menstrual period. Allowing 2 days as the life of the sperms, conception would then be possible, varying with the menstrual cycle, only from the 9th to the 14th day. Since, as is well known, physical and emotional upsets may influence the menstrual cycle somewhat, we must add a day or so to each end of this fertile period. The accurate determining of the time and the frequency of intercourse is thus vitally important and may be in some otherwise unexplained cases of childlessness the crux of the whole problem.

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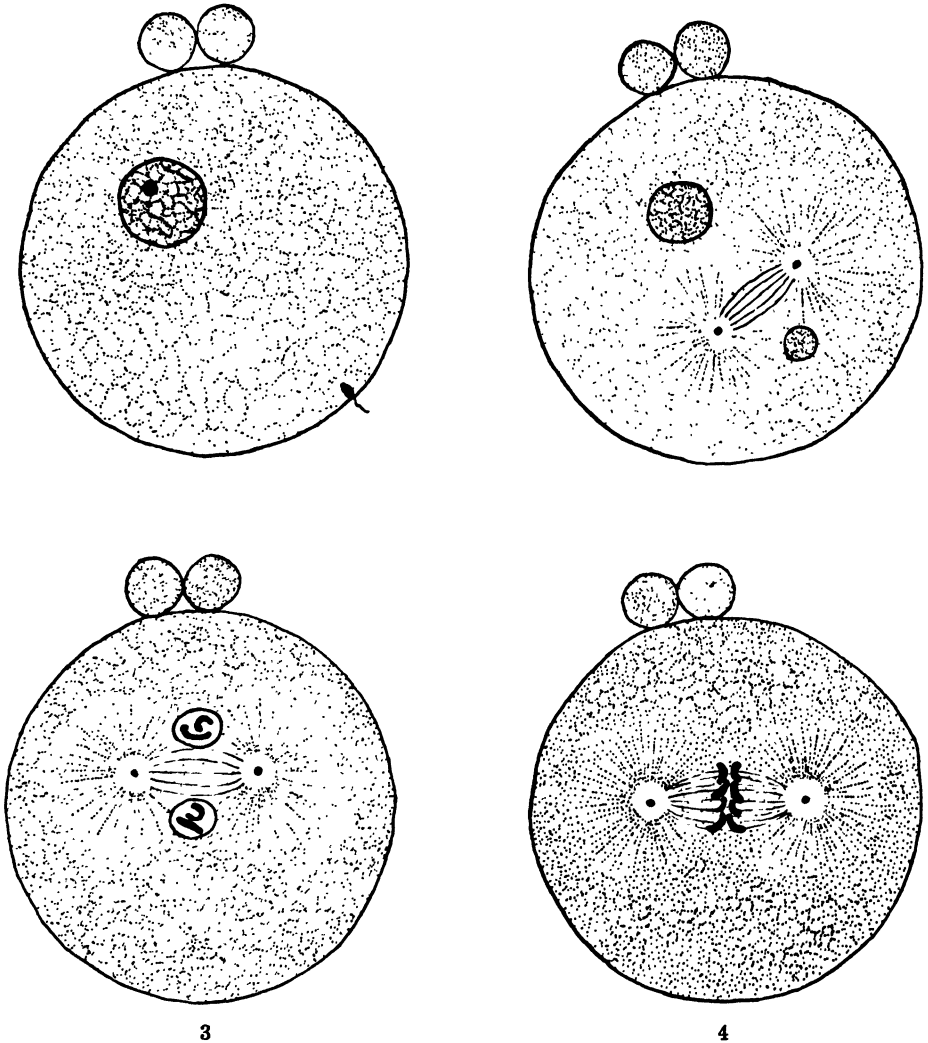
G. L. M.

FERTILITY INDEX, the index of procreative power, involving such factors as physiological antipathy or biochemical incompatibility of ovum and sperm.

Brooke M. Anspach (*Gynecology*, 1934⁵, p. 686): "Certain animal matings are fruitless yet the male or the female may be fruitful in other matings. A woman of low fertility index mated to a man of high fertility index may

conceive; mated to a man of low fertility index, she may not conceive. . . . The influence of the fertility index may be exhibited in the second marriage of the previously sterile or fertile woman. Her response to the second husband may be exactly the opposite of her response to the first. The oft-quoted example of the Empress Josephine may be recalled; she conceived twice with her first husband but was sterile with Napoleon."

FERTILIZATION in higher animals is the process of fusion of the sex cells known as the spermatozoon and egg which are respectively contributed by the male and female parents. The resulting single cell or zygote develops to form the adult organism. Fertilization starts the developmental processes and



FIGURES SHOWING GENERALIZED OUTLINE OF FERTILIZATION

1. Polar bodies above, nucleus of egg within and entering spermatozoon at lower right. 2. Egg and sperm nucleus approaching. Asters and spindle for first cleavage forming between nuclei. 3. Later stage. Chromosomes visible. 4. Nuclear walls dissolved. Chromosomes on first cleavage spindle.

Fertilization membrane is not shown in above figures.

provides the mechanism of biparental inheritance. Exceptions to some of the above generalized statements may be noted in certain protozoa and plants in which there is only a fusion of nuclei rather than of the entire cells and in certain hermaphroditic animals and plants, in which self-fertilization may occur by the union of cells contributed by a single parent. The account given in this article is limited to conditions typical of the higher animals. In such higher forms fertilization is seen to be a unique and extraordinary biological process. Two distinct and differently organized entities, the germ cells, unite to form a single unified organism, the fertilized egg, or zygote.

The ancients held various views in regard to the origin of the individual. Aristotle argues that the male contributes the seminal fluid which is the active formative factor that acts upon the menstrual blood which is a plastic material. It was probably more commonly thought that the male contributed the seminal fluid which grew in the female as a seed in soil. Some savage tribes are known to believe that the female contributes all and the male nothing toward the next generation. Variations of these views prevailed for centuries. William Harvey (1651) held that some sort of essence or vapor from the seminal fluid stimulated the uterus to conceive as the brain conceives an idea.

The modern resolution of the problem was impossible until it was established that each parent contributed an organized unit—the gamete or germ cell. In the absence of microscopic evidence it was easier to believe that only one parent contributed the minute organism which was stimulated to grow by an agent from the other parent.

Knowledge of the eggs of the bird and of lower vertebrates goes back to the dawn of history, but it was not until 1827 that Von Baer discovered the mammalian egg. The first written account of spermatozoa was that given by Leewenhoek (1677). Their significance, however, could not be understood until after the establishment of the cell theory by Schleiden and Schwann (1837). In the meantime Prevost and Dumas (1824) showed that sperm were necessary for the fertilization of the egg. Newport (1853) clearly observed the entrance of the spermatozoon into the frog's egg, but it was not until between 1875 and 1877 that details of the penetration were elucidated.

Fertilization consists of a series of events involving the mutual reactions of

the two germ cells. In brief, the sperm makes a contact with the surface of the egg. The contact stimulates important reactions on the surface and within the egg. The sperm is drawn into the egg. Its nucleus approaches and fuses with the nucleus of the egg. Processes of development are initiated and the basis of biparental inheritance is established. Most of our detailed knowledge of fertilization is founded on studies of lower organisms, especially of marine invertebrates.

The germ cells can function only at a well-defined period of maturity. Before fertilization is completed, the number of chromosomes in the nucleus of the germ cells is reduced to half the normal number for the species. This occurs early in the formation of the spermatozoon but is delayed in the egg until just before or during the process of fertilization. The excess chromatin of the egg is eliminated in the two polar bodies. The process of maturation or polar body formation may be completed before the entrance of the sperm or it may not be initiated until after the contact of the sperm. The precise stage attained prior to fertilization is a characteristic of each individual species. In most mammals, and probably in man, the process proceeds to the mid-point in formation of the second polar body before the egg is liberated from the ovarian follicle. The second polar body is formed after contact is made by the sperm. In the dog, however, the egg is liberated before the formation of either polar body.

Certain physiological properties also define the period of maturity. The spermatozoon has a life span the duration of which varies inversely with the degree of activity. Non-motile sperm will live longer than active sperm. There is also evidence that in mammals sperm will reach a period of maturity while in the male organs, after which its fertilizing power declines, although still inactive. Observations on certain invertebrates have shown that spermatozoa may lose their fertilizing capacity

while still motile. In the light of these facts it can not be assumed when motile sperm are found in mammalian uterus or oviduct that they necessarily still retain fertilizing capacity. Some older observations now open to question were held to show that sperm may remain active in the human female for three and one-half weeks. More careful observations on mammals have shown a much more limited life span, varying from 9 or 10 hours in the mouse to 48 hours in the horse. The egg also will react to the sperm only within a limited period after maturity is attained.

The germ cells are brought into proximity with each other by a great variety of breeding and spawning reactions, each characteristic of a given species. In mammals the sperm is usually deposited in the vagina and by its own motility or by sucking of the uterus and possibly by peristaltic action of the Fallopian tubes, it is brought into the vicinity of the ovum, usually in the Fallopian tube where the ovum has been brought from the ovary by ciliary currents. Studies on lower organisms such as the sea urchin have shown that in these forms substances diffusing from the egg may activate the sperm and the same or other substances may direct its course toward the egg. This latter reaction is brought about by the tendency of the spermatozoon to swim in the direction of increasing concentration of the diffusing substance which, in the case mentioned, may be the carbon-dioxide given off by the egg.

This interpretation has, however, been questioned on the basis that the sperm are merely trapped once they arrive in the environment of the egg. Environmental conditions may activate sperm, as, for example, sea water in many marine organisms, or possibly the prostate secretion in man. It is probable that the salt concentration and the acid-alkaline reaction is important. In the case of the sea urchin it has been shown that fertilization takes place between PH 6.8 to pH 10. A condition of acidity below 6.8 prevents fertilization. In

mammals the onslaught of the spermatozoon disintegrates the "zona radiata" formed of adhering follicle cells.

The contact of the sperm with the egg induces immediate reactions. The events occurring in marine ova are best understood. The first event is known as sterilization. An almost instantaneous change occurs in the cortex or surface of the egg, such that it will not react to other spermatozoa. Exceptions to this must exist in such animals as Elasmobranchs and Birds, in which polyspermy normally occurs. Sterilization is usually followed by another cortical change, the formation of a membrane surrounding the egg. This membrane is usually at some distance from the surface of the egg, so that the egg floats freely within it.

In some cases it arises by the separation of a pre-existing surface layer of the egg, or it is often a secretion. This membrane gives additional protection against polyspermy and in cases such as the parasitic worm *Ascaris* it is extraordinarily heavy, giving protection against an unfavorable environment. At the time of membrane formation, or shortly thereafter, metabolic changes occur. In most cases so far analyzed, more oxygen is absorbed, more carbon dioxide given off, and the heat production increases, as a result of fertilization. These changes are associated with an increased permeability of the cortex of the egg.

The most notable hypothesis in regard to the mechanism of the initial reactions is the *fertilizin theory* proposed by F. R. Lillie (1914) and based on studies of marine ova. This postulates that a chemical substance—Fertilizin—located in the cortex of the egg, may diffuse from the egg and react with the sperm. In turn the contact of the sperm now combined with Fertilizin induces chemical reactions in the cortex. This leads to membrane formation and other changes in the egg.

At the point of contact of the spermatozoon, a protoplasmic elevation of fertilization cone is formed at the surface

of the egg. The sperm in some cases becomes more viscous. There is basis for the statement that both egg and sperm are fertilized. It is a mutual reaction. While in some species the sperm may force its way in, its entrance is more frequently due to the sucking or engulfing action of the egg.

In some species the whole spermatozoon enters, in others the head only or the head and middle piece. The entrance in some species is effected in less than a minute. In the case of the marine worm *Nereis* it is delayed for fifty minutes. After entrance, the sperm head rotates through 180° so that the former caudal pole of the nucleus now precedes. An aster may form about this pole. In many cases it has been shown that the sperm aster forms about the middle piece of the spermatozoon. This led to Boveris' theory (1887) that an essential function of the sperm is to introduce a centrosome, carried in its middle piece, which later gives rise to the division centers of the egg which are necessary for cleavage.

Evidence has, however, been adduced to show that the sperm does not in certain cases carry a centrosome into the egg. The nuclei of the egg and the sperm are termed pronuclei. The sperm pronucleus may enlarge until it equals the egg pronucleus in size. By this time the two astral centers for cell division have appeared. They are frequently formed by division of the sperm aster, and they lie in a plane perpendicular to a line joining the two pronuclei. The nuclei come together and the chromosomes contributed by the two parents become visible within the two nuclei. The nuclear walls disappear and the mitotic figure for the first cell division is formed. The process of fertilization, as it is ordinarily defined, is completed with the fusion of the two nuclei.

The circumstance that the nucleus of both the egg and the spermatozoon contribute equal numbers of chromosomes is a profoundly important generalization. This was first clearly established by Van Beneden (1884) and was one of

the important discoveries which eventually led to the establishment of the chromosome theory of heredity. The only important exception is connected with the determination of sex.

In contrast to the equality of the nuclei, the cytoplasm of the two gametes differ greatly in quantity and in differentiation. The egg is heavily laden with food material in the form of yolk and is non-motile, while the spermatozoon carries a very limited food supply and is motile. The egg may, on account of its larger cytoplasmic content, have a greater influence than the sperm in early developmental stages, but in the main the essentially equal nuclear contributions determine the characters of the new individual.

Cross fertilization between the gametes of different species is relatively rare. In addition to the protection against this event afforded by differences of breeding habits and methods of mating, there exists an incompatibility between the gametes themselves. The sperm of one species in mammals can not call forth the appropriate reaction from the cortex of the egg which will permit the fusion of the gametes. In other cases, the sperm may penetrate and development ensues for a short time or to maturity, as in the case of various well known hybrids, such as the cross between the horse and the ass, producing the mule.

F. J. Cole, *Early Theories of Sexual Generation* (1930); E. E. Just, *The Present Status of the Fertilization Theory* (Protoplasma, 1930, 300-42); F. R. Lillie, *Problems of Fertilization* (1919); F. R. Lillie and E. E. Just, *Fertilization* (1924, ch. viii in *General Cytology*, ed. by E. V. Cowdry); E. B. Wilson, *The Cell in Development and Heredity* (1925³, ch. v.).

H. B. G.

FESCENNINA CARMINA, or FESCENNINE VERSES, were originally impromptu and good-natured verses delivered, sung, or acted by the rejoicing rustic population at harvest-festivals. In time, especially at Roman weddings, Fescennines became so malicious and obscene that they were finally suppressed by the Twelve Tables. The Fescennine

was the origin of Italian drama. The name is derived either from the town of Fescennia in Etruria, or from the fascinum (phallus) which as the symbol of life was carried in processions to ward off the evil eye. The name has survived, and verses of a gay, scurrilous, and licentious character are still said to be in the Fescennine style or manner.

The chief reference in ancient literature in Horace: *Epistles*, ii, i, 139-55.

FLAGELLATION. The term, flagellation, is out of ecclesiastical Latin, *flagellatio* (Tertullian, *Ad martyr.*, 4 end), *flagellum*, a scourge or lash (the "horrible flagellum" of Horace, *Satires*, i, 3, 119).

Complexity of the Subject.—It is, naturally, flagellation, or whipping, as a sexual excitant that interests the sexologist; but as even a superficial inspection of the subject, or everyday observation, will show, it is by no means easy always to keep the strands distinct and to demarcate, for instance, the use of the lash as a religious discipline from its employment as an erotic stimulant, while a ponderable and sometimes a large element of the erotic frequently enters into the bodily chastisements inflicted by parent, schoolmaster, the master of slaves, the legal executioner, the military superior, the prison official, etc. Just as, in tracing the origins of prostitution, one has to go back to primitive guest-rites and ancient religious ceremonials, so with erotic flagellation, if we are to obtain an adequate view, we must investigate to some degree, the history of the lash and rod as a punishment and as a penance inflicted for real or fancied wrong-doing, by the victim himself or at least by his consent.

As for erotic flagellation, pure and simple, we know that it has existed from a remote antiquity, and that it was a recognized part of the love ritual of the ancients, a preparation for the rites of Eros, and as such, known to every debauchee.¹ During the Middle Ages, under a dominant Christianity,

¹ Paul Lacroix, *History of Prostitution*, Part iii, Ch. xxvii.

which yet recommended the lash for the soul's good, flagellation of an unveiled erotic character is exceedingly rare, not daring to show its head, and being compelled to surround itself with the utmost secrecy.² It is altogether natural, therefore, that the erotic-sadistic or masochistic impulse—for it, of course, continued to exist—should have had recourse to a ready-waiting channel, which was very much what happened in the case of the notorious Flagellants sect, to become the still more notorious *Battus* of Henri III, etc. And this admixture of the religious and sensual motives—the two are close neighbors from the point of view of genetic psychology—is observable down to modern times, breaking forth every now and then in some *cause celebre*, such as that of Father Girard and Mlle. Cardière, which shocked the early eighteenth century. This relation between the erotic and the religious impulse may be brought out by comparing two quotations. One is a description of the pure erotic flagellant, and is taken from Pico della Mirandola's *Tract against Astrologers*:

"His passions are never aroused except when he is flogged; and he will insist upon this disgraceful proceeding being carried out as follows: he calls for the most savage strokes, and will upbraid his flayer, should the latter prove remiss; nor is the fellow's task completely fulfilled until he has drawn blood, but he must lay on ever more violently with his lash on the poor wretch's hapless limbs."³

This is the type of masochist or, perhaps, defective or depleted sensualist, whose case history, in slightly varying form only, is to be read in Krafft-Ebing or any treatise on sexual aberrations.

² *Ibid.*

³ The Latin reads: "*Ad Venerem nunquam accendetur nisi vapulet. Et tamen scelus id ita cogitat; saevientes ita plagas desiderat, ut increpet verberantem, si cum eo lentius egerit, laud compos pleni voti, nisi eruperit sanguis, et innocentes artus hominis nocentissimi violentior scutica desaevierit.*"—On flagellation in general, see the works by Meibornius and Moreau, listed in the Bibliography at the end of this article.

The other quotation is from the Abbé Boileau's *Historia flagellantium*, à propos of the sect of Flagellants and the effect of their "discipline":

"It follows that when the lumbar muscles are flayed with rods or whips, the vital spirits are aroused and salacious motor impulses are stirred up in the neighborhood of the genital parts; and the mind and brain being fascinated with venereal images and temptations, the virtue of chastity must find itself hard pressed."⁴

For, as we shall see, one of the forms of the *disciplina flagelli* was the *deorsum disciplina*, or lash inflicted upon the lower or lumbar region.

There are other facts which might be cited by way of establishing the erotic-religious bond. When, for example, the Flagellants spread to Spain, their semi-nude processions there took on a decidedly gallant character; flagellation, like bull-fighting, was something that seemed to appeal to the Spaniards, who were in the habit of practising it, like a serenade, under my lady's window. And when one reads of the Flagellants, male and female, exchanging "disciplinary" strokes, one could not but suspect—if the suspicion were not more than borne out, as it is, by history—that the basic sentiment of the "penitents" was that expressed in Butler's *Hudibras*:

*Why may not whipping have as good
A grace, performed in time and mood,
With comely movement, and by art,
Raise passion in a lady's heart?*

From this, we may go on until we find flagellation become a pastime of royalty, as when Catherine de Medici turned her maids of honor across her knees, or an "art" to be taught in six lessons,⁵—cf. the advertisements of modern dancing or jazz piano teachers.

⁴ The original: "*Necesse est cum musculi lumbares virgis aut flagellis diverberantur, spiritus vitales revelli, adeoque salaces motus ob viciniam partium genitalium et testium excitari, qui veneris imaginibus ac illecebris muniturque lascivians ac virtutem ad extremas angustias redigunt!*"

⁵ See the Introduction to W. M. Cooper's *Flagellation and the Flagellants*, listed in the Bibliography.

Enough has been said to indicate, at the start, something of the complexity of the subject and its ramifications. Bearing these latter in mind, we may now return for a historical view of the subject of flagellation as a whole, that approach which has been mentioned above as being necessary.

The Antiquity of Corporal Punishment.—Corporal punishment, someone has observed, is as old as sin itself. An illustration of the fondness of the human mind for scholastic hair-splitting is afforded by the controversy, quite a serious-faced one, which was carried on for a long while over the question as to whether flogging as punishment or flogging as penance is the older form. Without wasting any time over this query, we may note that the use of the scourge, in any event, goes back to the most remote ages of which we have any record.

It was the commonest of punishments for slaves, and the Roman Juvenal and other writers have left us descriptions of the whippings to which the unfortunate servants of antiquity were subjected. The slave to be flogged was often suspended from a beam, with his body held down by a *centumpondium*, or hundred-pound weight.⁶ That something of a sadistic, if not a pure erotic element entered here at times is indicated by the fact that it was not uncommon to have a slave flogged for the amusement of one's guests. A slave would occasionally beg a guest to intercede for him in such a case, as in Petronius' *Cena Trimalchionis*—and we are acquainted with the hypersexual character of Petronian society.

The Roman wits even took the matter up and had their fling at it, by coining a number of names for slaves, based upon the particular variety of punishment administered. There were: the *restiones*, those who were scourged with ropes (*restis*, a rope; see Plautus, *Mostellaria*, iv, 2, 2); the *bucacidae*, those who were whipped with ox-hide thongs (Plautus, *ibid.*, iv, 2, 1); the *flagriones*, those who were beaten with the *flagrum*, a variety of whip (Nonius Marcellus, 28, 27); the *verberones*, those upon whom the *verber*, yet another sort of lash, was used (Plautus, *Amphit.*, i, 1, 128 and 187,

⁶ Plautus, *Asinaria*, ii, 2, 37; Cato, *De re rustica*, 13 end.

and elsewhere; Terence, *Phormio*, iv, 4, 3, and elsewhere);⁷ etc.

So prevalent was the custom of whipping at Rome that whips and scourges, the implements of flagellation, were on display in every courtroom and in every home. These implements ranged from the comparatively innocent *ferula*, or schoolboy's switch⁸ and the *scutica*, a milder form of lash,⁹ to the deadly *flagellum*. That the *flagellum*, which was fashioned of plaited thongs of ox-leather, might be at once a tool of lust and a death-dealing one is indicated by the "*ille flagellis ad mortem caesus*" of Horace's satire.¹⁰ The *flagella* sometimes bore on their ends sharp-pointed balls of metal, by way of increasing the torture.

It is worthy of note, in passing, that Apollo, as the slayer—the flayer—of Marsyas, was worshiped at Rome under the name of Tortor,¹¹ in a section of the city where instruments of torture, including whips, were sold.

Christianity failed to do away with the inhuman beating of slaves, as may be seen from the fifth canon of the Council of Elvira, where it is provided that, in case a slave has died as the result of a flogging, his *mistress* is to be suspended from communion for a period of years.

During the medieval era, retainers, especially pages, were whipped as the slaves of antiquity had been before them. Such whippings commonly took place in

⁷ *Verbero* was used in the general sense of scoundrel or rascal, i.e., one deserving of the lash. Cf. Cicero, *Epist. ad Atticum*, xiv, 6, 1. As for the *flagriones*, we read, in Afranius quoted by Vopiscus: "*flagriones dicti servi, quod flagris subjecti sunt: ut verberones a verberibus.*" See Nonus Marcellus, 28, 27.

⁸ Horace, *Satires*, i, 3, 120; Juvenal, 6, 479, etc.; Martial, 14, 80; Ovid, *Ars amatoria*, i, 518, etc.; Columella, viii, 10, 1.

⁹ Horace, *Satires*, i, 3, 113; Juvenal, 6, 480; Ovid, *Heroides*, ix, 81; Martial, 10, 62.

¹⁰ *Satires*, i, 2, 41; *Epodes*, 4, 11; Catullus, 25, 11; Ovid, *Ibis*, 185; Juvenal, 6, 749; etc. *Flagellum* was also used for a riding-whip (*Aeneid*, v, 579) and for a cattle-whip (Columella, ii, 2, 26).—The Satire referred to is not included in Prof. Conington's translation.

¹¹ Suetonius, *Augustus*, 70.

the castle kitchen, but occasionally served for the delectation of noble on-lookers.

In eastern harems, female slaves were (and probably still are) subjected to whipping, and even sultanas were not exempt from such punishment, if punishment it always was. For slaves were not the only ones so to suffer. History affords examples of queens who have endured such chastisement, while kings have submitted to it at ecclesiastical hands, as a mode of expiation. Persian nobles were liable to the scourge, as were Vestal Virgins at Rome, for breach of rules, and as erring monks and nuns were to be in the Middle Ages—the monks, it is said, were sometimes flayed in a state of complete nudity, in street or public square.¹²

The rod, needless to say, has also been in use from time immemorial, in the hands of parents and teachers as a method of training the young. From Horace's birching pedagogue to the English headmaster of the old school,¹³ instructors have caned their charges, and soundly upon occasion. In these canings, the sadistic element is at times obvious, while at other times, the victim takes an evident masochistic pleasure in the act. In girls' boarding-schools, corporal punishment formerly became a rite, and there grew up the custom of "elegant flagellation," as it has been termed. Parents, also, once were accustomed to employ the rod as a gratuitous moral lesson on the occasion of solemn events, such as a public execution, in order to impress the occurrence the more deeply upon the child's mind. And as will be brought out later, parental whippings to this day may serve as an undisguised erotic-sadistic outlet.

Ancient Religious Flagellation.—At Sparta, the flogging of boys was elevated to the rank of a state-religious

¹² Cooper, *op. cit.* (Bibliography).

¹³ The proverbial fondness of the English schoolmaster for the rod has put a picturesque phrase into the contemporary French erotic argot: "*éducation anglaise*" for flagellation (J. Lacassagne, *L'Argot du milieu*, Paris, 1928, p. 79).

institution, as may be seen from the allusions of Plutarch. Contests were staged, at which the male youth vied with one another in being whipped for a whole day in front of the altar of Diana. The lad who could endure the greatest number of stripes was the one who carried off the prize, and proud parents looked on as their sons competed for the honor. Priests were on hand, as witnesses and for the purpose of dressing wounds—just as doctors might wait at the ringside of a modern prize-fight. The priests in addition predicted the careers of the participants, their prophecies being based upon the ability to bear pain that was manifested by the various entrants.

In trend with the Spartan rite, certain philosophic sects took up flagellation as a part of their discipline. Notable among these was the Cynic school, which in this respect imitated the East-Indian Gymnosophists, or Naked Philosophers. The same spirit is to be seen in the Lupercalia, or festival of the Lycean Pan at Rome, which was celebrated in the month of February, and in the course of which the *Luperci*, or priests of Pan, with painted faces and clad only in a loin-cloth, were accustomed to run about the city, striking all the women they met, by way of rendering the latter fruitful. There was, further, the Lupercal race, in which men of noble birth, such as Marc Antony, would run the gauntlet of blows, a custom (for it is really the same) which has come down to comparatively modern times in Continental military usage—for instance, in the Austrian army, where soldiers had to run just such a gauntlet.

Religious flagellation in ancient times was also to be found among the Syrians, who resorted to it as a means of propitiating their gods, and among the Egyptians, who, according to Herodotus,¹⁴ indulged in communal beatings at the festival of Busiris, held in honor of the goddess, Isis.

Medical Flagellation.—Besides its

¹⁴ Herodotus, ii, 59.

other uses, flagellation in antiquity was a form of medication. In accordance with the axiom which has come down from Hippocrates' time, "*Ubi stimulus, ibi affluxus*," it was looked upon as producing a salutary blistering of the skin, resulting in a reanimation of the torpid circulation of the cutaneous vessels, together with an increase of muscular energy. It was, accordingly, not uncommon for the old physicians to prescribe slapping, which really amounts to our modern massage. Whipping was recommended as a remedy for madness by Asclepiades, Coelius, Aurelianus and others, and was employed as a "cure" for feigned diseases, such as sham epilepsy. It was a remedy for constitutional laziness, for colds and ague, for love, lock-jaw, choking, and (so Seneca states) for certain fevers.

Flagellation among the Hebrews.—It was, however, as a religious discipline in good part that flagellation was to be passed on to the Middle Ages. The ascetic early Church was to find it a convenient weapon for combating the Devil and his wiles, as represented by a decaying pagan civilization. But since, in investigating almost any subject that has to do with primitive Christianity, one finds himself under the necessity of going back to Old Testament sources, it will be well here first to have a look at the Jew and his experience with the lash, by way of seeing what, if any, basis we may there discover for the Christian attitude.

As captives in Egypt, the Israelites had learned what flogging meant, as its victims. When the requisite daily number of bricks was not produced, the whip was their punishment. "And the officers of the children of Israel, which Pharaoh's taskmasters had set over them, were beaten, and demanded, Wherefore have ye not fulfilled your task in making brick both yesterday and today, as heretofore?"¹⁵

In this verse of *Exodus*, the Vulgate reads: "*Flagellati sunt.*" And two verses below, "thy servants are beaten"

¹⁵ *Exodus*, v, 14-16.

in the Vulgate is: *flagellis caedimur*—"we are felled with lashes." (It is to be noted that St. Jerome makes use of *flagellum*, the name for the deadliest form of Roman scourge.)

Whether or not Moses and his followers had learned a lesson from their captors, whipping became a punishment prescribed by the Mosaic code. The number of stripes was limited to forty, which in practice was thirty-nine, in order to be on the safe side and not run the risk of committing an injustice by inflicting a blow above the legal number. The thirty-nine stripes are likewise to be accounted for by the fact that a triple scourge, consisting of one long curling lash and two shorter ones, was the implement commonly employed. It was the custom to administer thirteen strokes with this triple scourge, making thirty-nine in all, where fourteen strokes would have brought the total to forty-two, or two above the limit prescribed.

This will explain such a statement as St. Paul's, in *II Corinthians*, xi, 24: "Of the Jews five times received I forty stripes save one." The law is laid down in *Deuteronomy* xxv, 2-3: "And it shall be, if the wicked man be worthy to be beaten, that the judge shall cause him to lie down, and to be beaten before his face, according to his fault, by a certain number. Forty stripes he may give him, and not exceed: lest, if he should exceed, and beat him above these with many stripes, then thy brother should seem vile unto thee."

The scourging of Christ preceding the Crucifixion has now become one of the Church's "Sorrowful Mysteries"; and there is Christ's own flogging of the money-changers in the Temple, with "a scourge of small cords." The other Apostles as well as Paul were to make the acquaintance of this form of punishment, as may be seen from *Acts*, v, 40: "and when they had called the Apostles, and beaten them, they commanded that they should not speak in the name of Jesus," etc.

On the other hand, it has been pointed out that the Old Testament offers no justification for voluntary flagellation. It is true, there is the fourteenth verse of the seventy-third¹⁶ Psalm: "For all the day long have I been plagued, and chastened every morning," the Vulgate reading: "*Et fui flagellatus tota die, et castigatio mea in matutinis*"; but Jerome, patron saint of translators, would seem here to be reading an early-Church austerity into the figurative Hebraic text.

¹⁶ Psalm LXII. in the Vulgate.

So far as New Testament authority goes, the chief passage which might seem to point to flagellation as a self-inflicted discipline is *I Corinthians*, ix, 27: "But I keep under my body, and bring it into subjection: lest that by any means, when I have preached to others, I myself should be a castaway." Now, the Greek verb of which St. Paul makes use, and which is rendered by "keep under," is "*hypopiazō*," the literal meaning of which is *to strike some one under the eye, to give a black eye, to beat black and blue*; Aristophanes (*Pac.*, 541) employs it in such a sense. The weight of critical opinion, none the less, including that of the lexicographers, is in favor of a figurative interpretation of this passage.

Rise of Christian Flagellation.—Christian flagellation really dates from about the fifth century A.D. (the century in which St. Jerome died). Slow in starting, it gradually came to be looked upon as a salutary discipline, one that was of particular efficacy in rescuing souls from purgatory, and which was especially pleasing to the Virgin Mary. When a monk died, his ghost sometimes, so the accounts run, would return to exhort his former brothers to acts of piety, and the latter would then flagellate themselves until the departed spirit was at rest. Or a cleric, who in life, for one reason or another, had shunned "the discipline," would find himself duly punished for his remissness, in the land of sorrowing shades.

The pious were accordingly careful not to spare the lash. There was the eighth-century St. Pardulph, who was in the habit of flagellating himself during Lent; and he has numerous saintly successors, St. William, Duke of Aquitaine, St. Rodolph, St. Dominic Loricatus, etc.; while active flagellation was occasionally resorted to as a sanctified method of repelling amorous advances on the part of temptresses, as happened with St. Edmund, Bishop of Canterbury, during his student days in Paris. As the tale has it, St. Edmund had been greatly tormented by a certain young woman; until finally, one day, he sent for her to come to his room. There he had her undress before him, and he then proceeded to lay on the whip, a traditional incident which has been pre-

served in an old engraving, to be found in works on flagellation.

But it was the eleventh-century (circa 1056) Cardinal Damian, Bishop of Ostia, who had much to do with the firm establishment of flagellation as a churchly rite,¹⁷ and who is the first historian of religious flagellation. It is not long now until the thirteenth-century Flagellants are appearing on the scene, with excesses so unmistakably erotic in nature as to become one of history's scandals.

The Flagellants.—Church historians, or those who lean forward in an effort to be fair, will assert that there is no connection between the practice of the Flagellants¹⁸ and the Church's attitude, rightly understood, toward the circumscribed use of flagellation as a discipline, which will be considered in more detail later in this article. While this may be true, and while it is true that the Flagellants were one of those heretical sects which are always springing up throughout the Church's history, and which are to be found today as in previous ages (cf. the "Holy-Rollers," etc.), the fact remains, the discipline of flagellation had been developing in the bosom of the Church for some eight hundred years, and with especial intensity for some two hundreds years before.

The Flagellants will be found making their appearance at intervals from the thirteenth to the sixteenth century; but there were two notable outbreaks of this variety of fanaticism, one of which started in Perugia, Italy, in 1260,¹⁹ while the second, inspired by the Black Death, occurred in Germany, in 1349. In each case, the movement took on an eschatological character, owing to the circumstances out of which it grew; for the first, as well as the second, outbreak was the psychological result of the plague, in this instance the plague of 1259. Social-political conditions in Italy also had something to do with the inception of the Flagellants. The peninsula was exhausted and

society vastly disorganized by the protracted Guelph-Ghibelline struggle. The body-social, in other words, was a weakened, run-down organism, and thus, a ready prey to a social malady of this sort. When the Flagellants appeared, preaching the corruption of the world and the wrath of God to come, they found literally thousands who were ready to listen to them, who were but waiting for an evangel, any evangel.

The sect as reorganized by Rainer, hermit of Perugia, soon numbered 10,000 adherents and began spreading northward over the Alps, into Switzerland, the eastern and northern provinces of France, Spain, Germany and the Netherlands, Austria, Bohemia, Poland, and elsewhere, and the sectarians were eventually to make their way as far as distant England and Sweden.

The distinguishing feature of the Flagellants was their processions. Nude to the waist, even in the dead of winter, they would march two by two, preceded by a cross and banners, and as they went, they would lash themselves with whips and thongs that often had sharp iron points on the end; and they would keep this up until the blood streamed, a necessary result to be attained, inasmuch as it was believed that the blood so shed, by mingling with the atoning blood of Christ, was possessed of a mystic sinner-saving efficacy. With this end in view, they flayed themselves and one another unmercifully, the men, as has been stated, exchanging blows with the women; and all the while, they sang hymns and filled the air with their groans, as the tears streamed from their faces. Throngs would come from far and near to witness these processions, the origin of which was attributed by some to St. Anthony. All in all, it was a sight reminiscent of the ancient Luper-calia; it was in the nature of a religious bacchanalian festival.

Lashes were also inflicted by the director in charge upon the penitents, as the latter lay stretched on the ground, in a public place.

"The penitents all lay in various positions, according to the different kinds of sins they had committed. The perjurer raised three fingers in the air. The adulterer lay flat on his belly. The drunkard pretended to be drinking, the miser to be fleeing his gold. All exposed those parts of the body which were to be fustigated. The blows were distributed by the head of the

¹⁷ See the Bibliography.

¹⁸ See the Bibliography.

¹⁹ The date is sometimes inaccurately given as 1259. Lacroix, *op. cit.*, *ibid.*, and Mantegazza, who takes it from Lacroix, *The Sexual Relations of Mankind* (*Gli amori degli uomini*), Part I, Chapter iv, so give it. Cooper, *op. cit.*, dates the movement from 1210.

confraternity, in *pro rata* fashion, according to the sins depicted by the Flagellants' pantomimic gestures."²⁰

These sanguinary ceremonies were sometimes held, not in daylight and the public square, but at night, in the depths of a wood or in some other lonely and sinister spot. There, the "discipline" would be administered by the light of a torch or in utter darkness; and under such circumstances, it is altogether reasonable to suppose that erotic excesses occurred to which flagellation was but the prelude.

For the casuists were frank in admitting that bodily treatment of this sort tended to a super-excitation of the physical senses; but it was held that there was all the more merit in overcoming such a temptation once it had been voluntarily created. Yet others held that the effect of the floggings was rather to repress lust; but we have heard what the Abbé Boileau has to say on this head.

The scandal grew so speedily that the Flagellants were soon suppressed, by Manfred, son of Frederick II, and by the early part of the year 1261, the sect had practically died out in Italy. Traces of it lingered on over Europe, until the Black Death (1347-49) gave it a new lease on life, in the middle of the fourteenth century.²¹ As fully developed, the sect had a doctrine, embodied in fifty articles, which were condemned by the Council of Constance, 1414-18. The Flagellants believed in mutual confession and absolution, and in voluntary "penances" as a substitute for the sacraments of the Church and the ministrations of the clergy. There was, as well, a rigid discipline, the members being bound by oath to implicit obedience to their leader. The sectarians were supposed to abstain from physical pleasures, and to observe 33-day periods of flagellation and torture, in commemoration of the number of years Christ lived on earth. They

had a distinctive garb, a cloak with red crosses sewn upon it, and they wore

The Flagellants got small foothold in France, outside of the eastern and northern provinces, but they made their way into the papal territory of Avignon, where they were condemned by Clement VII. Lacroix, however, is responsible for the statement that, at the time of the Black Plague, there were 800,000 Flagellants in France, including many members of the nobility, who had forsaken their families and ancestral castles to profess the weird new faith. Once the danger from the Black Death had subsided, the sect once again entered upon a decline, and is heard of only now and then after about 1350.

In 1414, under the leadership of Conrad Schmidt, a group known as the *Flegler* sprang up in Thuringia and Lower Saxony. These neo-Flagellants speedily incurred the wrath of the Inquisition, in its sternest form. Schmidt and nearly a hundred of his followers were burned at Sangershausen, in 1414, and a host of others paid with their lives in other places. This, despite the fact that the Inquisition itself made extensive use of flagellation;²² for it was not flagellation that the Inquisitors were here combatting, but rather a novel and heretical body of doctrine.

Another group, independent of the Flagellants proper, was the "Scourgers," who, following the teachings of Vincent Ferrer, had spread over Spain, southern France and northern Italy at the close of the fourteenth century. They wore long white robes, in which their heads and faces were completely veiled, and which conferred upon them the name of "*Albi*," or "the White Ones." They dropped from sight after the Council of Constance, the sessions of which ended in 1418.

The social historian will be interested in noting, *en passant*, that the Flagellant movement, particularly in Germany and the Netherlands, tended to take on an anti-Semitic tinge.

Henri III and the "Battus."—After 1454, we have no mention of the original Flagellants, although they were to be followed by numerous orders, bands and sects which made of flagellation a dogma and a rite. Such were the White, Black and Gray Penitents, who overran France in the sixteenth century; and the infamous "*Battus*" of Henri III, France's most degenerate monarch, in reality derived their inspiration from the Flagellants of one hue or another who had preceded them. It was, per-

²⁰ Lacroix, *Op. cit.*, *ibid.*

²¹ Hecker's *Epidemics of the Middle Ages* (see Bibliography).

²² Lea, *History of the Inquisition* (see Bibliography).

haps, by way of doing penance for all his homosexual debaucheries with his "*mignons*" that the King instituted the Confraternity of Penitents, with processions similar to those held in Rome. In these processions, the members marched two abreast, clad in white linen sacks. They sang psalms and flayed themselves as they went, but the moral effect on the by this time thoroughly disillusioned French populace was quite spoiled by the presence in line of the notorious and effeminate "*mignons*," His Majesty's male favorites. That the penitential feelings of the monarch and his intimates did not go very deep is indicated by the fact that the procession would be followed by an anything but penitential repast.

This aroused the ire of a monk by the name of Poncet, who happened to be preaching the Lenten service at Notre Dame at the time. "I have learned on good authority," Poncet cried from the pulpit, "that last night, the spit turned for the supper of these fine penitents, and that after having eaten a fat capon, they had for their midnight snack the *petit tendron* which had been kept in waiting for them."

The audacious preacher, needless to say, got thrown in jail for his pains. The King, come what might, was determined to be a "penitent"; and so, the torch-light processions kept up, with the royal person and his homosexual cohorts leading the van. As for the "*mignons*," they appeared to take a masochistic delight in the proceedings. Pierre de l'Estoile, in his *Registres-Journaux*, tells us that they laid on until their "poor backs were all red from the blows which they gave themselves; all of which led to the composition and dissemination of a number of quatrains and *pasquils*, *sornettes* and other like *villainies* on this lashing and new penitence of the King and his *mignons*."

Henri III may have been bent upon doing penance for his scandalous sins; but if so, it was, as the people remarked, merely in order to sin the more. It is more likely that he had that fondness

for ecclesiastical trappings and ceremonies, together with a certain masochistic bent, which the homosexual not infrequently manifests. We know, for one thing, that His Majesty had had painted in his prayer-book the portraits of his *mignons* in friar's garb; and he is said to have been in the habit of having his masculine accomplices flogged in the royal presence, in the King's private chamber. The "penitential" flagellant procession would, therefore, merely have afforded an opportunity for one of the most brazen of crowned degenerates, with that defiant passion for display which is one of his kind's characteristics, and under cover of a religious pretext, to flaunt his vices yet one more time in the face of an already outraged people.

For the populace firmly believed that this "Confraternity" had been instituted to propagate the principles of sodomy; and they found confirmation for this in the fact that one of the masters of ceremonies was a fellow by the name of Du Peirat, "a fugitive from Lyon for the crime of atheism and sodomy." The lack of popular illusion on the subject is shown by the phrases which were coined to describe the "penitents": "*confrères du cabinet*," or "brothers of the closet" and "*ministres de la bande sacrée*," or "ministers of the holy troop."

Whatever the "dispositions" of Henri's *mignons* may have been—and it is likely that they were all more or less of a feather—there was nothing for them to do but comply with their sovereign's wishes; they must accompany him to churches and convents, make the Stations of the Cross with him, pray with him and listen to long, boring sermons, all in order to gain indulgence for past offenses, offenses which would be repeated on the morrow. It must be admitted that Protestant historians, with an ax to grind, have had a considerable hand in painting the picture that has come down to us of Henri III; but nevertheless, behind the smoke of faction, there was a very real and factual fire. What we have here, in the case of one possessed of royal power, is a, for the most part, unabashed mingling of the sensual and religious impulses in connection with flagellation.

Authorities will inform us that the original sect of Flagellants disappeared shortly after the middle of the fifteenth century; and this,

if we are to be minutely technical, is the case; but that devotees of flagellation, who went by the generic name of "flagellants," continued to exist to a much later date is evidenced by the tract against them which was published in the sixteenth century, by the theologian, Gerson, Chancellor of the University of Paris. And at the beginning of the seventeenth century, in 1601, we find the French Parliament starting proceedings against the various sects addicted to the practice of flagellation. Occasional processions, strongly reminiscent of those of the Flagellants, are reported from Italy, Spain, and Portugal during the seventeenth century, in connection with certain religious festivals. Father Mabillon describes one seen at Turin, on Good Friday, in 1689. In 1710, a procession with cross-bearers was viewed in Italy, and other processions were to be witnessed at Lisbon, down to 1820, while the last report of one accompanied by flagellation is dated 1847.²³

The Church's Doctrine and Practice.—We have heard, above, a disclaimer of the relation between the Church's doctrine and practice of flagellation and the excesses of heretic sectarians. We may now examine briefly the attitude of Catholicism on the subject and cast a glance over the history of the practice in the bosom of the Church.²⁴ In the first place, the Church holds that voluntary self-chastisement in the form of flagellation is permissible and even meritorious, when performed with the proper dispositions and without ostentation or fanaticism, with a true Christian faith and hope in the merits of Christ. This is based upon that verse of St. Paul's (*I. Corinthians*, ix, 27) which has been quoted above, and upon *Colossians*, iii, 5: "Mortify therefore your members which are upon the earth," etc.

Such is the doctrine in its simple form, without elaboration or embroideries. The latter were to come in the course of time, and from within the Church, as always happens when individual interpretation takes a hand; and if we are to be fair to the Church, we must keep in mind that, while many things may exist within her fold and under her cloak, this is not to say that

she, doctrinally, approves of them all; it is her custom often not to decide until a test case is raised.

In any event, it may be repeated, voluntary flagellation as a discipline is to be met with in the Church as far back, approximately, as the fifth century. Various forms of the *disciplina flagelli* later evolved. There was the *sursum disciplina*, or that inflicted upon the upper portion of the anatomy; while the *deorsum disciplina* was addressed to the lumbar region or lower. St. Dominic Loricatus was among those who prescribed flagellation as a penance, and in accordance with his discipline, a besom (bunch of twigs) or birch rod was to be employed; but variants were often introduced, consisting of nettles, thistles, feather-tufts, and the like. Another well known mode was the "Cornelian discipline," which was *supra dorsum nudum*, or "on the bare back," deriving from the sixteenth-century Franciscan theologian of Bruges, Cornelius Hadrien (Adriansen).²⁵ These various forms will be found employed in different orders of the Church, and with additional monastic variations.²⁶

Among the addicts of flagellation as a mode of penance was the famous St. Theresa, and her example was followed by the barefooted Carmelites, male and female, whose founder she was. Another Carmelite of note as a flagellant was Maria Magdalena of Pazzi (born at Florence, in 1566), who was associated with the Convent of the Holy Angel of St. Friars.

The Order of Fontevrault, founded by Robert of Aubrissel, was in the nature of a sexual community, in which the nuns were fond of flogging monks and novices.

It is of interest to note that, in the case both of St. Theresa and of Robert of Aubrissel, there was a distinct erotic predisposition. St. Theresa's youth had been in good part spent over romantic

²³ Cooper, *op. cit.*

²⁴ See Anisson, *op. cit.*; also, Lea, *History of Auricular Confession and Indulgences* (see Bibliography).

²⁵ Born at Utrecht, 1520, was at Bruges circa 1548.

²⁶ See the works by Heimbucher, Zöchler and others cited in the Bibliography.

tales of chivalry,²⁷ while Robert of Aubrissel came to the religious life as the result of an amorous disappointment.

The Cistercians and the Trappists are other orders which, in times past at any rate, have made use of the scourge. The former were moderate in its employment, and Port-Royal failed to live up to expectations in the matter of austerities of this kind. The Cistercians were reformed by Rancé of La Trappe, in the middle of the seventeenth century, and it was then, in the reformed Trappist branch, that hair-cloths and iron-wire girdles made their appearance, along with a more strenuous use of the rod, in accordance with that inhumanly severe rule for which the Trappists are famous. Still another noted Cistercian flagellant was Mother Passidea of Sienna.

The Urban nuns, a branch of the Franciscans, founded by Isabella, daughter of Louis XIII, also practised the "discipline."

The Capuchin nuns, founded by Maria Laurentia Longa, when introduced into France by Louise of Lorraine, to form a convent at Marseille, brought with them from Italy the flagellatory rites which had been instituted by their founder. For Maria Laurentia was in the habit of having herself flogged for the slightest offense she might commit.

Among other orders which have practised flagellation may be mentioned: the Camalduenses and the Celestines (Romuald, the founder, was a great self-flagellator); the Carthusians; the Trinitarians; the Benedictines (who made but a mild use of the lash); the Fathers of Dea; the Cenobites and Eremites; the Premonstratenses (branch of the Benedictines); the Augustinian and Ursuline nuns; the barefooted Augustinians; the monks of St. Anthony (very mild use); the Visitantines; the Hospitalites; the Theatines; the Dominicans (noted for their severities); etc.

²⁷ This is not to speak of the other glaringly erotic evidences to be discovered in her life and teachings.

The order of Annonciades may also be mentioned. It was founded by Maria Vittoria Fornari, who was accustomed to receiving visits from the Devil, in the course of which his satanic majesty would drag her around over the house. By way, accordingly, of expiating the sins which had brought down upon her such visitations as these, Maria would flay herself until she fell unconscious; and not unnaturally, when she came to found a religious order, she was led to embody similar austerities in her rule.

As for the Jesuits, much has been made of their use of the rod, especially in their schools. The order has been involved in more than one scandal in this respect;²⁸ but one is not to lose sight of the many and bitter enmities that are usually involved in any such case; since when it comes to making enemies, the powerful and aggressive Society of Jesus is a past-master at the art. It cannot be denied that Jesuit writers have recommended flagellation as a discipline, while Jesuit missionaries have been known to use it on the heathen.²⁹ Its employment may have been found necessary in the schools, as a means of enforcing the Jesuits' pedagogical precept: "*Repetitio mater studiorum*," which has been wittily parodied as "*Repetitio mater stupidorum*"; but if so, its use has greatly decreased in modern times, as even those who are by no means too favorably disposed to the order are forced to admit.

In the history of monastic flagellation as a whole, we come upon certain strange practices, as when we read of nuns flagellating themselves before proceeding to the election of a Mother Superior. And the "discipline" when practised by or upon the laity occasionally led to unlooked for results, which were now and then of a humorous sort. There was, for instance, as related in Scott's *Mensa philosophica*, the wife who was to be flagellated by the priest in her husband's presence, for the sins she had

²⁸ See the work, *La flagellation chez les Jésuites*, cited in the Bibliography.

²⁹ Cooper, *op. cit.*

committed. But as she was, or pretended to be, of not too strong a physique, the husband offered himself in her stead. It was the *deorsum disciplina*, or "lower" discipline, which was to be administered; and as the husband bared the requisite parts, the wife cried out: "Lay on, Father, lay on! for I am a very great sinner, indeed!"

A Cause Célèbre.—Once in a while, the erotic flagellant working under the guise of religious devotion ends by breaking into the public prints and achieving an unenviable notoriety. This was the case with Father Girard, at Toulon, in the early years of the eighteenth century. An attractive young penitent, one Mlle. Cardière, had come to him, and the priest, seeing in her his "spiritual affinity," imposed upon her the "discipline" of flagellation, to be administered by himself. He went about it cautiously at first, and had the young woman come to a house next door to the ecclesiastical residence. There, according to accounts which later came out at the trial, he proceeded to work her up into an amorous-mystic ecstacy. At length, Mlle. Cardière became aware of the true nature of her feelings, and confessed as much to her "director." The latter assured her that the passion she felt was hallowed in the sight of God, and their relations continued with an increased ardor, and with much jumbling of the religious and erotic motives.

This lasted until the priest grew tired of his "spiritual" paramour, began to feel her as a burden. It was when he strove to be rid of her that the trouble started. For Mlle. Cardière was not the only young woman involved. Father Girard had upon occasion brought in other fair "penitents," whom he had flogged in front of his "soul mate." The ecclesiastical authorities at first were bent upon an investigation; but as the scandal grew, they became alarmed and began to do what they could to hush the matter up—the Jesuits, in particular, exerting their efforts in this direction. The thing, however, had gone too

far and was not to be stopped. The consequence was an airing before a tribunal and in the press of the day; and Father Girard and Mlle. Cardière have become names in the history of flagellation, the former having earned for himself the contemporary reputation of being a "sorcerer."³⁰

Cornelius Hadrien, previously mentioned, also acquired some renown, by reason of the species of academy of religious flagellation which he conducted.

Among the countries in which the seed sown by the Flagellants continued to bear fruitage was Germany, where we find, in the eighteenth century, a *Geisslerbrüderschaft* with a set of duly drawn statutes.³¹

Penal and Military Flagellation.—Religion is far from being the only form under which a disguised erotic flagellation may survive. In general, it is more often than not impossible to say, in such instances, as to just when, or to what degree, the erotic element is present. We know that in pre-Soviet Russia the cudgel and the knout were in commonest use, and we hear of floggings being administered to ballet-girls, and even to ladies of quality at public police-stations.³² The soldiers of the Czar are also reported as flogging the women of invaded Poland; for under the *Schrecklichkeit* of war, it is easy to conceal impulses which are in reality sadistic. Much the same might be said of military and penal flagellation as a whole. One writer³³ has remarked that "it was reserved for Americans to make a trade of flagellation; they have invented, in the days of slavery, a machine for whipping niggers"; and there can be no doubt that a character such as the Simon Legree of *Uncle Tom's Cabin* has in him more than a fair proportion of the sadist.

This is the danger of the whipping-post as a punishment for crime, a punishment that is still retained by the American state of Delaware. And

³⁰ Cooper, *op. cit.*

³¹ See the work cited in the Bibliography.

³² Cooper, *op. cit.*

³³ Cooper, *op. cit.*

when whipping is applied to religious or political prisoners, as it was to the Quakers in the time of Cromwell, it is still more likely to become an outlet for a purely erotic or erotically tinged personal passion. No one could doubt, for example, that a preponderant sadistic element enters into the persecution of minority groups by the contemporary Nazis, which achieves a physical expression in the beating of Jews and similar exploits on the part of Storm Troopers of the Hitler regime.³⁴ But the possibility of the erotic-sadistic element playing a part is seldom, if ever, taken into account by the authorities; and as a result, penal floggings, even in more civilized countries, have existed down to a very late time; Scotland is a case in point here, where the lash has been used both as a civil punishment and an ecclesiastical penance. In China, there is the "great bamboo," and in darker Africa, the "mumbo-jumbo," etc.

Parental Flagellation and Eroticism.—If the law has need to beware of the intrusion of the sadistic impulse in corporal punishment, parents have as great, or an even greater, need to fear it. Parental floggings may be but a mask to the erotic instinct; they may even be but an aid to a debilitated marital relation. And this probably happens oftener than might be supposed in the outwardly respectable bourgeois family. It happens in France, for one place, if we are to credit some of the recent novelists of French family life. Two passages come to mind. In Georges Duhamel's *Vue de la terre promise*,³⁵ the third novel in his Pasquier Chronicle, the implications are plain enough, if unstated. In a passage in Louis-Ferdinand Céline's *Journey to the End of the Night* (*Voyage au bout de la nuit*),³⁶ the flogging of a child is depicted, clearly, as a remedy for sexual

impotence on the part of the father and husband. Indeed, the employment of flogging as a parental corrective is in itself a fairly good argument, throughout the world of bourgeois society, against the desirability of preserving the family in its present form.

As to cases of pure erotic flagellation, they are of common occurrence in medical and police annals, and one exhibits much the same general characteristics as another, such difference as there is lying chiefly in the matter of accouterments or implements, sometimes in the setting, which may be of an elaborate and fetishistic nature. Such instances would accordingly seem to belong rather in a volume of case-histories than in a work like the present one; and as has been stated, the reader will find such histories in Krafft-Ebing and other writers. Flagellation here becomes merely one form of the sadistic or the masochistic impulse, or of both. In Continental newspapers of a certain type, one frequently comes upon advertisements reading somewhat after this fashion: "Elderly gentleman interested in the works of the Marquis de Sade would like to meet young lady interested in the works of Sacher Masoch," etc.³⁷

In short, it is difficult in flagellation, especially when directed to the lumbar region, to avoid producing a sexually excitatory effect, upon the recipient, and upon the one who administers it, should the latter be possessed of the slightest sadistic taint or predisposition; and this, however presumably high and moral the motives—religious, penal, pedagogical or parental—which lead to the applying of the lash or rod. The explanation, as no one who has an elementary acquaintance with the anatomy of the nervous system needs to be told, lies in the juxtaposition and distribution of the nerves of the lumbar region.

For what is asserted to be "a first attempt at a bibliography of modern French and English books on flagellation," see the work listed below, *La flagellation chez les Jésuites*, etc.—

³⁷ Advertisements of this sort will be found in a little paper published in the Montparnasse Latin quarter of Paris.

³⁴ Harrison Brown, *Six months of Hitlerism* (The Nation, August 2, 1933).

³⁵ *Vue de la terre promise*, Georges Duhamel, Paris, 1934, pp. 270-71.

³⁶ *Voyage au bout de la nuit*, par Louis-Ferdinand Céline (Dr. Destouches), Paris, 1932, pp. 331-32.

HISTORICAL: William M. Cooper, *Flagellation and the Flagellants, a history of the rod in all countries, from the earliest period to the present time*, London, 1877.—**EROTIC FLAGELLATION:** Meibornius, *De flagrorum usu in re venerea*, Leyden, 1629; D. T. Moreau (De Tours), *Des aberrations du sens génésique*, Paris, 1880; Kraft-Ebing, *Psychopathia Sexualis*, any edition.—**CHRISTIAN FLAGELLATION:** Par Anisson, *Historia flagellantium; de recto et perverso usu flagrorum apud Christianos*, 1700; Förstemann, *Die christlichen Geisslergesellschaften*, Halle, 1928; Lea, *History of Auricular Confession and Indulgences*, New York, 1896; Heimbucher, *Die Orden und Kongregationen der katholischen Kirche*, Paderborn, 1897; Zöchler, *Askese und Mönchtum*, Frankfurt, 1897.—**THE FLAGELLANTS:** The *Historia flagellantium* of the Abbé Boileau is one of the best known sources; cf., in English: J. S. Loime, *History of the Flagellants; or the advantages of discipline, being a paraphrase and commentary on the Historia Flagellantium of the Abbé Jacques Boileau*. . . . by Somebody who is not doctor of the Sorbonne, London, n.d.; also the work of Cooper's cited above; on the relation of the plague to the Flagellant movement, Hecker's *Epidemics of the Middle Ages*, (English translation), London, 1846.—**FLAGELLATION AND THE INQUISITION:** Lea, *History of the Inquisition*, New York, 1875.—**FLAGELLATION AND THE JESUITS:** *La flagellation chez les Jésuites; mémoires historiques sur l'orbilanisme, avec la relation d'un meurtre tout à fait singulier commis dans un collège de Paris, en 1759*; this volume also contains: *Premier essai de bibliographie sur la flagellation; livres modernes, français et anglais*, Paris, 1912.—For the statutes of a flagellation confraternity, see: *Statuten einer Geisslerbrüderschaft in Trient aus dem 18. Jahrhundert*, Innsbruck, 1881.

S. P.

FORARIAE (from *foras*, outside, without). A Roman term for prostitutes from the country district

FOREIGN WOMAN. From early times, "foreign woman" or "strange woman" has been a term associated with the prostitute. This has a significance for the history of prostitution which is not to be overlooked. With the Hebrews of old, by way of preserving the purity of the home, there was a tendency to confine prostitution to women of another race. See Solomon's description of the "strange woman," in the fifth and seventh chapters of *Proverbs*:

"That they may keep thee from the strange woman, from the stranger which flattereth with her words, . . . for the lips of a strange

woman drop as an honeycomb. . . . Lest strangers be filled with thy wealth, and thy labors be in the house of a stranger. . . . Let them be only thine own and not strangers with thee. Let thy fountain be blessed and rejoice with the wife of thy youth . . . let her breasts satisfy thee at all times. . . . And why wilt thou, my son, be ravished with a strange woman, and embrace the bosom of a stranger!"

As for the Greeks, the inhabitant of the dicterion was a foreign woman, in the sense that she was not a citizen, but a serf of the state and subject to a heavy tax. Many of the Hellenic hetairai were déclassé cosmopolites, or women who had forfeited their citizen's rights. The Athenian hetairai came, in good part, from the various Mediterranean islands. The *forariae* (from *foras*, without, outside) at Rome were low-class prostitutes from the country districts. The *peregriinae* were, literally, strange or foreign women; see Ovid's allusion (*Heroides*, ix, 47) to "foreign loves"; see the *Andria* of Terence, i, 1, 119, and *ibid.*, iii, 1, 11; Horace, *Odes*, iii, 3, 20. Many of the Roman prostitutes had come from all points of the Empire. Some had accompanied the legions home, as prisoners or as camp-followers, while others were exploited by the *venones*, or procurers. At Rome, too, those more or less occasional prostitutes, the dancers, flute-players, the *saltatrices*, *fidicinae*, *tibicinae*, like their Greek correspondents, the *auletrides*, were mostly of foreign extraction, coming from Egypt or Asia. All foreign women at Rome were registered, and the police kept a close eye on them.

This foreign, vagrant or vagabond association in connection with the prostitute is to be found running down through the Middle Ages. It is to be seen, e.g., in the late-medieval "*rues foraines*" at Paris. It speaks in part, no doubt, of the prostitute's natural instinct to seek pastures far from home, and her tendency to lead an unsettled and wandering life; but enough has been said to bring out certain broader implications on the part of society at large, amounting to a hypocritical but

altogether human disinclination to see those near to one involved in the ugly business of prostitution. The element of the exotic as a sexual titillation is likewise to be taken into account.

S. P.

FOUETTEUSE, a female flogger; a woman, usually in a brothel, who whips men for their sexual gratification.

FREEMARTIN. The freemartin is a term of uncertain derivation applied from ancient times in England to the sterile female of cattle born twin to a bull; the term has been extended loosely in popular usage to apply to any sterile female. Such usage is to be condemned; but recent extension of usage to include all cases of sexual malformation and sterility due to causes of the same nature as those producing the freemartin condition in cattle rests on a logical basis. The definition of "freemartin" thus becomes etiological.

It has been known from the time of the Romans at least that female calves born twin to a bull are usually sterile; about 10% of such females are, however,

normally fertile (Lillie 1923); the term freemartin should apply only to the sterile females of such twin-pairs. Twins of the same sex are normal.

It has been demonstrated that twins in cattle arise from separate ova, and that the malformation of the freemartin is due to secondary fusion of the embryonic chorions *in utero* and anastomosis of extra-embryonic blood vessels, with consequent mingling of the bloods of the twins (Fig. 1). (Tandler and Keller 1911, Keller and Tandler 1916; F. R. Lillie 1916, 1917.) If the chorions of the twins fail to fuse, or if vascular anastomosis does not occur, the female is normal. If the twins are of the same sex, fusion of chorions and anastomosis of blood vessels also occur, but are without visible effect.

Such fusion and anastomosis was found to occur, at least in some cases, before sex differentiation of the embryos begins (Lillie 1923). The conclusion was therefore reached that the freemartin is zygotically a female modified by the sex hormones of the male

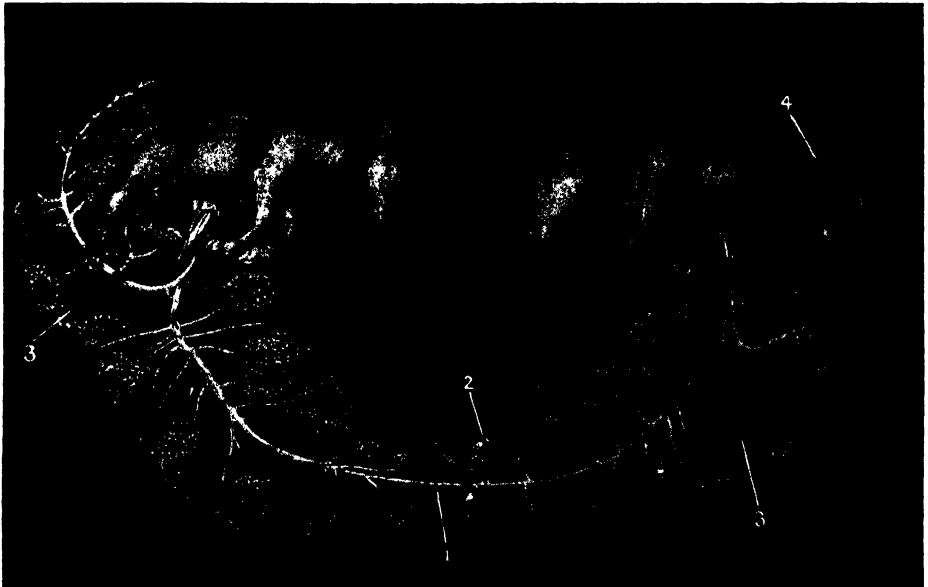


FIG. 1. Twin chorionic vesicle of cow; double injection. ♂ 22.75 cm. ♂ 22.25 cm. $\times \frac{3}{8}$. 1. Arterial through trunk. 2. Cotyledon with venous connection with both sides. 3. Amniotic sacs opened. 4. Clitoris of freemartin; note female arrangement of teats; cf. with male.

twin which circulate in both individuals during foetal life (F. R. Lillie 1916, 1917). This interpretation is in accordance with the sex ratios of all twins of cattle. An older contrary interpretation that the freemartin is a malformed member of a pair of male twins, hence zygotically male (Spiegelberg, Bateson, Hart), is thereby disproved.

Anatomy.—The earliest account of the anatomy of the freemartin is by John Hunter, 1786 (see also Numan 1843, Spiegelberg 1861, Lillie 1917 and Bissonnette 1924). Figure 2 illustrates a particular case. It will be seen that the internal organs are of male type, though malformed, and the external genital organs typically female. Hence the description "transverse hermaphrodite" earlier applied to this condition. The arrangement of the mammary teats is also typically female. The anatomical condition is subject to considerable variation in detail, but is always definitely *intersexual*, with no transitional cases to either normal sex (Lillie 1917).

The gonads are of relatively small size; they may be entirely abdominal in position, or one or both may be descended in a peritoneal pocket to a position beneath the skin of the groin; there is never a scrotum. The histological condition is a very variable composition of constituent elements of the normal testis, viz.:—sex cords (homologues of seminiferous tubules or of the medullary cords of the ovary), rete, epididymis; these may be without any interconnections, or in the most transformed cases may be united by tubuli recti, and vasa efferentia essentially as in the normal testis. Germ cells are not found after birth. Very rarely a small rudiment of ovarian cortex is found (Willier 1921). Interstitial cells are also found, but are apparently inactive.

Müllerian duct derivatives are always very much reduced, Wolffian duct derivatives on the other hand are relatively highly developed as compared with the female, but subject to considerable variations (see especially Bissonnette 1924). It is doubtful whether the ex-

ternal genitalia are ever modified in the male direction in a real freemartin; certainly in the immense majority of cases they are typically female. In the few cases that have been described the etiology is more or less questionable.

Development and etiology.—The argument for the sex-hormone theory of the freemartin is as follows: 1. The freemartin and its twin always arise from separate ova; they are never mono-

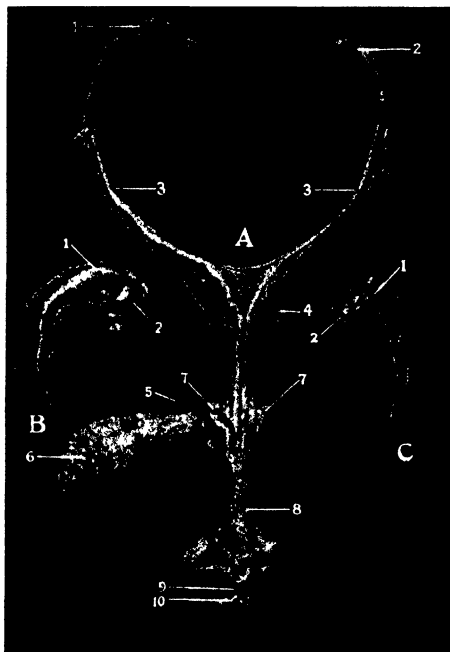


FIG. 2. Reproductive organs of a seven weeks old freemartin. $\times 5/24$. Born twin to a male. The dissection shows a dorsal view. A. 1, left sacculus vaginalis containing gonad; 2, right sacculus vaginalis containing gonad; 3, Vas deferens (Wolffian duct); 4, broad ligament; 5, uterus; 6, bladder; 7, seminal vesicles; 8, urogenital sinus; 9, vulva; 10, clitoris. B and C. Left and right sacci vaginales opened. 1, testis; 2, epididymis.

zygotic (Lillie 1917, 1923, Bissonnette 1924). 2. The sex-ratios of cattle twins, and the development of the reproductive system of the freemartin itself, prove that the freemartin is zygotically female (same refs.). 3. If chorionic fusion and anastomosis of umbilical blood vessels fails, the female is normal (10%

of cases). 4. The primary effect of the fetal intermixture of blood is on the reproductive system of the female. 5. Interstitial cells of functional type appear in the testis, before the earliest known effect on the reproductive system of the female appears (Bascom 1923); and this furnishes a histological basis for the sex-hormone theory.

The condition under which intermixture of blood of the twins arises goes far to explain the anatomical variability of the freemartin. Usually there is one corpus luteum in each ovary. Hence the respective embryos arise in right and left horns of the uterus, and the membranes have to grow through each horn before they meet in the corpus uteri. This may happen by the time the embryos are 10 mm. long; but fusion of membranes and extension of blood vessels into the fused area require more time, which appears to be highly variable. These conditions are usually established before the first signs of sexual differentiation appear in embryos of about 25 mm. in length. Actual vascular anastomosis may appear earlier or later in this process, and it is probable that variation of time of vascular anastomosis is the chief factor governing the degree of intersexuality attained.

This conclusion is based on the fact that there is no relation, beyond a certain minimal requirement, between magnitude of vascular anastomosis and degree of intersexuality. This is a very striking fact. When both embryos are in one horn of the uterus (Lillie 1923), or when two bull calves are associated with one female in case of triplets (Bissonnette 1928), although the male hormone dosage of the female is presumably increased, there is no corresponding increase in the degree of intersexuality of the female. Vascular anastomosis, once established, usually persists up to birth; hence duration of action of the hormone does not appear to be a factor in the degree of intersexuality.

Conditions indicate an "all-or-none" type of action in the formation of the

freemartin; presumably, therefore, the differentiating action concerns a rather definitely delimited period of development, and, presumably also, for each organ a critical stage of determination. The maximum reaction never passes beyond a degree of transformation similar to that indicated in Fig. 2, with possible exception, in very rare cases, of slight malformation of the external genitals. The minimum reaction is quite an extreme departure from the normal female, always sufficient to produce complete sterility.

The action of the male hormone is not only to stimulate its homologous elements in the female, but also to cause degeneration of certain heterologous elements, as for instance the cortex of the ovary (cf. esp. Bissonnette 1924, and 1928). In this respect the action of this embryonic hormone appears to differ from adult conditions in which no antagonism can be shown to exist.

Beyond the "critical stage" in the determination of the freemartin, where action of the embryonic male hormone is certainly the prime factor, other factors enter into the final differentiation. The essentially castration effect of suppression of the ovarian cortex is certainly one of these, presumably responsible for the general castrate habitus of the adult freemartin. Laterality effects are also obvious (cf. Fig. 2). Reciprocal effects on other endocrines, especially the hypophysis, are to be postulated.

The question may be raised why, not only is complete sex-inversion of the female never attained, but why the transformation always stops so short of this result? Complete sex inversion is theoretically possible (see under FREEMARTIN EFFECTS). Genetic sex-determining and sex-differentiating factors must be postulated for cattle. Before the sex-hormones are elaborated by the embryo, these, whatever their physiological nature, must be the effective factors in sex-differentiation. It is known from Willier's experiments on transplantation of embryonic gonads of the chick

(1927, 1933) that irreversible sex determination of gonads precedes any visible evidence thereof.

The same principle may be postulated concerning certain elements, at least, of the reproductive system of the freemartin, especially the urinogenital sinus and the external genitalia including the scrotum (cf. Bissonnette 1924). The failure of the scrotum to form prevents, among other factors, complete descent of the testes, which in itself would completely inhibit spermatogenesis. In short, it is clear that an irreversible stage of determination of certain essential elements of the reproductive system of the freemartin is reached, before the male sex hormone becomes effective in its body. We are, of course, unable to say how far transformation might proceed if the male sex hormone were present from the beginning of development.

In other mammals, in cases of twinning, or ordinary multiple pregnancies, vascular anastomosis of neighboring chorions is very rare. That it may occur exceptionally in pigs and cause intersexuality has been shown by Hughes (1927). The suggestion that the rare male tortoise-shell cat, which is sterile, may be a female inverted by male hormones in embryonic life has not been supported by evidence subsequently collected.

Genetic Sex Factors.—Genetic sex-factors are typically normally balanced and do not directly enter into the etiology of the freemartin. It is, however, probable that certain cases of intersexuality in cattle unassociated with twinning are due to unbalanced genetic sex-factors. There is also the possibility that in very rare cases such genetic unbalance may coincide with twinning with unpredictable results. Intersexuality due to unbalanced sex factors, or at any rate resting on a genetic basis as indicated by heritability, is much commoner in some other mammals. It is apparently rather common in goats (Rickards and Jones 1918). The natives of the New Hebrides breed a race of

pigs for intersexes, which they prize (Baker 1925).

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F. R. L.

FREEMARTIN EFFECTS. Under this head may be grouped together cases of experimental intersexuality produced by action of heterologous gonads or sex hormones during embryonic life. In this usage of the term freemartin by various authors its sense is extended to include effects of female on male, as well as male on female. In the attempt to produce freemartin effects experimentally Minoura (1921) grafted pieces of testis or ovary of fowl on the chorio-allantoic membranes of chick embryos. He believed that intersexes of various grades were thus produced. However, Greenwood (1925), Kemp (1927) and

Willier and Yuh (1928) repeating his experiments were unable to secure his results; and Willier and Yuh (1928) showed that controls under similar conditions of incubation produced the same kind of modifications as the experimental cases.

It seems to be rather definitely demonstrated now, that freemartin effects cannot be produced in this way. This result is rather difficult to interpret, unless on the assumption that secretions of the graft reach the embryo only after critical stages of determination are past. Willier (1927 and 1933), in fact, observed that embryonic gonads transplanted in the chorio-allantoic membranes of the chick were unaffected in their differentiation by the sex of the host, even in cases of those transplanted in all indifferent stages tested. In this way the very early sex-determination of the gonad was demonstrated.

Willier, Gallagher and Koch (1935) have, however, demonstrated that sex hormones bring about profound changes in the reproductive system of chicks, amounting in extreme cases to rather complete sex inversion. In zygotically determined males theelin or theolol in aqueous solution, injected into the albumen of eggs at about 24 hours incubation, in the highest concentrations used, brings about transformation of the left testis, which normally has cortical rudiments, into an ovary; and tends to reduce the right testis, which normally lacks cortical rudiments, towards the rudimentary condition of the right ovary; the oviducts may also become hypertrophied in such males instead of degenerating as in the normal, but the Wolffian ducts are unaffected.

In females the same dosages at the same time of incubation lead to hypertrophy of the oviducts, but the reproductive system remains normal in other respects. Lower concentrations produce lesser effects. In the case of the male hormone the results are still uncertain with experiments continuing; the only constant specific effect so far reported

is a considerable hypertrophy of the Wolffian ducts in both sexes.

Experiments on embryonic parabiosis have been made in Amphibia to imitate freemartin conditions. Observations have been confined largely to the gonads, as the ducts are relatively late in differentiating in Amphibia. In the first experiments to be reported on this subject, Burns (1925) concluded, in the case of *Amblystoma punctatum* joined in parabiosis shortly after closure of the medullary folds, that complete reversal of sex occurs in one partner of each parabiatic two-sexed pair, and that in some cases it was the zygotic male that dominated, in others the zygotic female. In later papers (1930 and 1931) he essentially confirmed this result in *Amblystoma tigrinum*. In recent studies on heteroplasmic combinations of the two species (Burns 1935) he finds that "the tigrinum member, irrespective of sex, is dominant. In two-sexed combinations its large gonads remain relatively unmodified, sooner or later those of the punctatum member, irrespective of sex, undergo modification." In this connection it should be noted that *A. tigrinum* grows more rapidly, and reaches the stage of sex differentiation in about half the time required for *A. punctatum*.

Humphrey (1933, 1935), produces similar experimental results in Amphibia by methods of transplantation.

Thus zygotic ovary may become testis, or *vice versa*, in such combinations, rendering necessary the conception of release of sex-specific determining substances (hormones). Domination of one gonad over the other is not dependent on its sex specific character, but on secondary conditions.

Witschi (1932, 1934) has similarly experimented on salamanders, toads and frogs. In toads two-sexed pairs are both normal; in frogs the female member is affected by the male, and sex reversal of the female may result. In salamanders the male tends to predominate; and Witschi does not find such extreme sex reversal as Burns does. He postulates "morphogenetic sub-

stances" that diffuse through the tissues rather than circulate in the blood as do true hormones; of these there is a female determining substance ("cortexin") and a male determining substance ("medullarin") named according to their sites of origin. The different effects that he finds among the Amphibia are attributed to variations in diffusibility of these substances. He seems to think that medullarin is more effective than cortexin (1934).

The so-called "freemartin effect" contributes to our understanding of the conditions of origin of the freemartin, and to our knowledge of the influence of sex hormones in embryonic life; and thus to an understanding of sex-differentiation.

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F. R. L.

FRENUM PREPUTII, the little bridle of the foreskin, a fold of tissue which fixes the prepuce to the lower part of the glans penis. If too short, this frenum prevents the prepuce from sliding over the glans. The frenum preputii may be considered, in a minor sense, the *male hymen*, since it is often torn during the first coitus, causing effusion of blood corresponding to the breaking of the maidenhood in the female.

FRICTION (Latin *fricare*, to rub). The rubbing of the genitals in masturbation, or the rubbing together of the genitals in coitus.

Aristotle (*De Generatione Animalium*, i, 18): "As to the vehemence of pleasure in sexual intercourse, it is not because the semen comes from all the body, but because there is a strong friction."

GAMETOGENESIS AND SEX-DETERMINATION [IN HIGHER ANIMALS INCLUDING MAN].

- I. INTRODUCTION
- II. SPERMATOGENESIS IN MAMMALS
- III. PRIMARY SPERMATOCYTES
- IV. SPERMIOGENESIS
- V. OÖGENESIS IN MAMMALS
- VI. SEX-DETERMINATION
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- VIII. BIBLIOGRAPHY

Introduction

It was known to the ancients that many of the higher animals, at least, had their origin from eggs but it was not until 1677 that the spermatozoon was first seen by Ludwig Hamm, a pupil of Leeuwenhoek. The latter is, however, usually given credit for the discovery because he reported the matter to the Royal Society and after making further studies, stated that the sperm probably enters the egg. The motile structures in the seminal fluid at that time, however, were regarded as parasitic organisms and the true nature and importance of the spermatozoon was not understood for at least a century that followed.

While in many books Spallanzani (1786) is given credit for showing that the spermatozoon is the fertilizing element, Lillie ('16) points out that Spallanzani really believed that fertilization was accomplished through the spermatid liquid itself, and that it was not until

1824 that Prevost and Dumas demonstrated the function of the spermatozoon in fertilization. The penetration of the egg by the sperm was not actually observed until 1854 when Newport studied the process in the case of the frog. In 1875 O. Hertwig made the discovery that the two nuclei which fuse within the fertilized egg are contributed one by the egg itself and the other by the spermatozoon; thus it became established that the new individual resulting from the fertilized egg receives a part of its nuclear material from each parent.

Cleavage of the fertilized egg of the frog was undoubtedly seen by many in the early days but it was first described by Prevost and Dumas in 1824. It must be remembered, however, that at that time neither the egg nor the units of cleavage, though clearly visible to the naked eye, were regarded as cells. Later (1838) the cell theory was propounded and the true meaning of cleavage was determined. The blastomeres were recognized as cells giving rise to other cells by their division. Then came a period of great activity in embryological research, especially on the differentiation of embryonic cells into tissues and organs; and it was shown that the fertilized egg gives rise through a series of divisions to all of the millions of cells of the body, including the germ cells.

The belief that cells arose *de novo* from the mother cytoblastema was gradually dispelled, especially by the work of such zoologists as Kölliker, Remak, and Virchow, and the law of genetic continuity was established, and clearly stated by Virchow in *Cellular Pathology* published in 1858. The importance of the law, however, was not fully realized until it was shown by van Beneden (1883), Rabl (1885), and Boveri (1887), that chromosomes maintain their individuality through the process of cell division and, therefore, from one cell to the next.

During the last quarter of the nineteenth century cytological researches were centered mainly on the problems of nuclear division, origin of the germ cells, and fertilization. An important foundation was built for the cytological researches in relation to problems in evolution and heredity. Some of the more outstanding workers of that period were van Beneden, Boveri, Flemming, and Strasburger.

Such zoologists as Hertwig (1884), von Kölliker (1885), and Weismann (1885), concluded independently that the nucleus is the carrier of hereditary characteristics as was first speculated by Haeckel in 1866. The rediscovery of mendelism in 1900 stimulated keen interest in detailed cellular studies, especially those on the structure and behavior of chromosomes, and marks the beginning of a new era in cytology and cytogenetics which work is still actively pursued at present. The early part of this century is marked by the contri-

butions of Morgan, McClung, Wilson, and many others on the history and behavior of the sex cells of invertebrates, especially those of insects, and Guyer, Winiwarter, Painter, Wodsedalek, and others on the sex cells of vertebrates.

It is not the aim here to discuss at length the process of gametogenesis in the various phyla of animals but rather to describe the processes and some of the more outstanding phenomena as they occur in the mammals, including mankind. Mention of conditions in other animal types will be made only by way of comparison, or because of historical interest and importance.

Spermatogenesis in Mammals

The process of spermatogenesis in mammals, or the history of the male germ cells from the primordial germ cells to the fully developed spermatozoa, goes on within the seminiferous tubules of the male gonads or testes. The main features of the process are, in general, similar in all of the mammals studied by the author, including human, several breeds of cattle, horses, sheep, goats, pigs, dogs, foxes, and species of deer, elk, moose, and a large number of the smaller mammals. The general histological structure of the different mammalian testes is likewise similar, with probably the most noticeable differences in the interstitial cells. While the histological appearance of the sections of the seminiferous tubules in different mammals is strikingly similar under low power of the microscope, there is considerable difference in detailed cytological structure of the germ cells, particularly in regard to the number, size, shape, and structure of chromosomes as made out under the highest power of the microscope.

During the later foetal development and at the time of birth of the mammal the germ cells are all in the early spermatogonial stage and arranged in an epithelial layer inside of and next to the tubule wall. In those mammals which are relatively short lived and in which sexual maturity is reached early, as is the case in many rodents, particularly in mice, rats, and guinea pigs, the process of spermatogenesis begins shortly after the animal is born. In

others in which sexual maturity is delayed, as is the case in the human, the process of spermatogenesis is likewise delayed for years.

During early life the spermatogonial cells grow and divide repeatedly, forming numerous other spermatogonia like themselves. Not infrequently in a young animal, before the first spermatocytes are produced, the spermatogonia become arranged in layers two or even more cells thick. Well in advance of sexual maturity some of the spermatogonia develop into primary spermatocytes while others remain as spermatogonia and give rise through growth and mitosis to other cells like themselves. In this manner, by the constant retention of some germ cells in the early stages, fertility of the male mammal is maintained in relatively advanced age.

Up to the last spermatogonial stages there is nothing unusual in regard to the behavior of the chromatin material and the chromosomes of the germ cells. The chromatin material grows and the division of the chromosomes is equational, that is, all of the chromosomes which constitute the diploid number of the species (presumably 48 in man) undergo division and are passed on to the succeeding cells. In this manner it is not difficult to understand how the numerous cells of the body, including the earlier stages of the germ cells, contain equivalent derivatives of all of the chromosomes. Or, the reverse of this can be visualized by tracing the full quota of chromosomes in the cells of the mature individuals backward through the developmental stages to the original fertilized ovum. It can be seen that in human cells half of the chromosomes (twenty-four) are maternal in origin or contributed by the mother through the ovum and the other half are paternal and contributed by the spermatozoon of the father.

Primary Spermatocytes

During the period preceding sexual maturity and continuing through the fertile stages of the mammal some of

the spermatogonial cells transform into primary spermatocytes. The cells increase considerably in size and the nuclear material goes through a series of interesting and important manoeuvres the understanding of which gives us the basis for explanation of many phenomena of inheritance. The procedure, not practised by other cells of the body, is necessary in order to bring about a particular type of cell division known as meiosis or meiotic division.

Before the process of meiosis can be properly interpreted, it must be understood that the full or diploid number of chromosomes consists of pairs of synapctic mates and that the two chromosomes of each pair are in general, though not always, alike in size and form. For example, in male cattle (Wodsdalek '20) there are thirty-seven chromosomes, one of which is the X- or sex-chromosome. The thirty-six autosomes consist of eighteen pairs of similar chromosomes known as synapctic mates. In the human male cells according to some authors (Painter, '23), (Evans and Swezy, '29) there are forty-eight chromosomes consisting of twenty-four pairs—twenty-three pairs of similar autosomes and one pair of dissimilar sex chromosomes known as the X- and Y-chromosomes. The synapctic mates are referred to as homologous chromosomes because they perform a corresponding function.

In the primary spermatocyte division the chromosomes do not divide as they do in ordinary mitosis, but the homologous chromosomes pair first and later divide at the point of pairing; so that half of each newly formed double or bivalent chromosome passes to one pole and the other half to the opposite pole. This is known as the reduction division because the chromosomes are reduced to one half in number (haploid) in the two new resulting cells.

In the early prophase, while the cells increase in size, the reticulum of chromonemata transforms into the leptonema stage characterized by the diploid number of long, thin threads, which rep-

resent the early structures of the chromosomes. The fine threads with their conspicuous chromomeres are at first scattered irregularly and later become assembled at one side of the nucleus, leaving the opposite side clear, and the cell enters what is called the "bouquet" stage. The homologous leptoneura threads then begin to conjugate in pairs—a process known as synapsis. This pairing of homologous mates, in all cases of mammals in which the scheme could be accurately determined by the author, was found to be by means of parasynapsis or side-by-side pairing of the threads rather than by means of telosynapsis or end-to-end pairing, which, according to some investigators, takes place in many other animals.

The nucleus then contains half the number of threads but they are thicker and bivalent since each is composed of two homologous chromosomes in synaptic union. The bivalent threads soon go through the pachynema stage which is characterized by pronounced shortening and thickening of these structures. That stage soon passes into the diplonema stage in which the dual nature of the thick threads becomes very conspicuous. The diplonema gradually passes into the diakinesis stage and the threads become progressively shorter and finally become compact, deeply-staining bivalent bodies or chromosomes scattered throughout the much enlarged nucleus, the membrane of which becomes exceedingly thin. Most of the chromosomes appear at the periphery of the nucleus while the remainder of that body is quite clear.

The large bivalent chromosomes are also referred to as tetrads, because, in reality, they are composed of four chromatids since each of the two homologous chromosomes that entered into the synapsis had grown and doubled its material. The nuclear membrane soon disappears and the chromosomes migrate to their metaphasic position in the first meiotic figure, thus ending the long and elaborate prophase. It is in the

polar view of the metaphase when the most accurate counts of the chromosomes can be made. The quadripartite nature of the tetrads is not as clearly discernible in mammals as in the case of many invertebrates.

The synaptic mates of the large bivalents separate and move as dyads toward the opposite poles of the meiotic figure. This movement of the chromosomes toward the opposite poles of the spindle characterizes the anaphase stage. Only in rare cases does the organization of the telophase nucleus take place. As a rule the metabolic nuclei are not formed and the dyads do not lose their distinguishable structure. Cytokinesis or the division of the cytosome then takes place and one half of the dyads may be found in each of the two resulting secondary spermatocytes. This division, generally known as the first meiotic division, is the reduction division because the original diploid number of chromosomes is reduced to one half as many or what is known as the haploid number. For example, in man the forty-eight chromosomes become reduced to twenty-four in number, one of each kind.

The resting or metabolic nucleus of the secondary spermatocyte is rarely seen and apparently there is no need for its formation. The individual chromosomes double their substance in the prophase of the first spermatocyte and instead of dividing equationally, as they do in ordinary mitosis, they pair with their homologous mates and then disjoin and subsequently are transmitted in their entirety to the second spermatocyte. Since the chromosomes are ready for equational division the cells lose no time in forming new mitotic figures in the secondary spermatocytes and the second meiotic division takes place giving rise to spermatids. Thus, four spermatids are produced from each first spermatocyte and each possesses the reduced or gametic number of chromosomes. It should be understood that this division is equational and the last in the history of the germ cells.

The nuclei of the spermatids become reorganized and the cells enter the metabolic stage during which they increase somewhat in size before undergoing transformation into spermatozoa.

Spermiogenesis

The process of the development of the motile spermatozoon from the spherical and undifferentiated early spermatid is called spermiogenesis. During this process many of the parts of the cell undergo profound transformations and the resulting structure is a free flagellate cell capable of locomotion. The spermatozoa of different animals vary considerably in size, shape, and structure, and this is true even

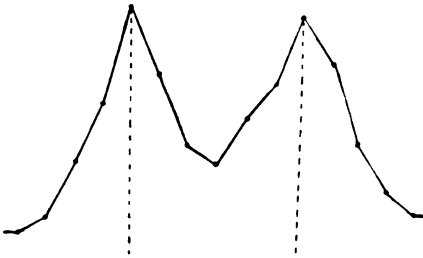


FIG. 1. Diagram showing the variation in size among six hundred mature spermatozoa of the bull.

within the same class such as mammals. In spite of the morphological diversity among the sperms of different species of mammals, the same fundamental plan of structure may be recognized in all of them. The mode of metamorphosis, though not free from variations in many details, likewise follows certain fundamental patterns. A typical mammalian sperm consists of the following components:

1. A flattened, oval head containing the acrosome and the nucleus. The bulk of the head consists of the nucleus which becomes flattened and ovate, and retains its chromatin material finely dispersed at the periphery. The acrosome develops from the acroblast of the cytoplasm and usually forms a sort of cap at the anterior portion of the head.

It varies greatly in size and shape in different mammals.

2. The middle-piece consisting of a short neck region which contains two or more basal bodies formed primarily from the anterior centriole, and the connecting piece containing the products of the distal centriole.

3. The tail or flagellum posterior to the middle piece which consists of two regions. The first called the main-piece or pars principalis contains the axial filament which continues from the middle-piece and is surrounded by a delicate cytoplasmic sheath. The second, and most distal part of the sperm, is the end-piece which is the continuation of the axial filament extending beyond the envelope or sheath and is, therefore, naked.

The metamorphosis of the spermatid into the sperm is very fascinating but too complicated to allow detailed description here. A series of figures redrawn from my publication on the spermatogenesis of the pig (Wodsedalek '13) showing the formation of the pig sperm is shown in Plate II, accompanied by brief descriptions. For detailed accounts of spermiogenesis in some mammals the reader is referred to Meves ('98 and '99) and Wodsedalek ('13).

When the cells reach the stage of development represented in Figs. 20-22 they attach themselves in bunches to large cylindrical Sertoli or nurse cells that often extend from the basement membrane a long distance toward the lumen of the tubule. As the spermatozoa continue to develop a gradual decrease in the volume of the cytoplasmic mass of the Sertoli cells is noticeable. When the sperms are apparently mature they abandon the Sertoli cells, which become collapsed, and the sperms scattered free in the lumen of the tubule in large numbers are ready to leave the testes. As will be seen later in this article, the sperms in mammals are of two kinds, one type is male-determining and the other female-determining.

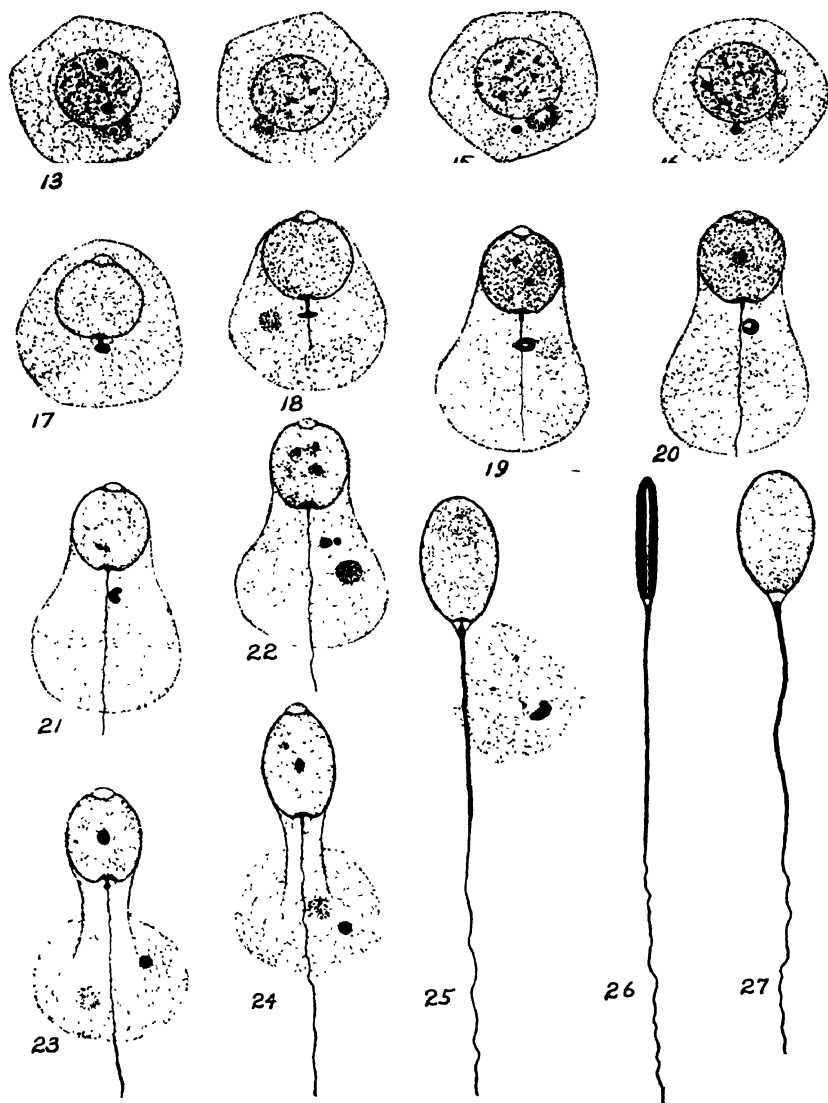


PLATE II

13 and 14. Two contiguous spermatids with conspicuous centrosomes. 15. A spermatid showing the large centrosome which had emerged from the sphere a short distance away. 16. A spermatid showing the centrosome in contact with the nuclear wall, and the migration of a portion of the sphere toward the opposite pole. 17. A spermatid showing the division of the centrosome, the position of the sphere as the acrosome, and the migration of the nucleus toward one side of the cell. 18. A transforming spermatid showing the separation of the centrosomes and the beginning of the axial filament. 19. A transforming cell showing a characteristic ring-like structure and position of the posterior centrosome with the axial filament extending through it. 20. A later stage showing the sloughing off of the posterior centrosome from the axial filament. 21 and 22. Later stages showing the axial filament extending out of the cytosome. 23 and 24. Still later stages of the developing sperm. 25. A spermatozoan almost fully developed showing the mass of sloughed off cytosome. 26. Side view of a mature pig sperm. 27. Surface view of a mature pig sperm.

Oögenesis in Mammals

The development of the female germ cells or eggs is called oögenesis. As in the case of spermatogenesis, the process is fundamentally similar in the different groups of animals, although there is considerable variation in detail. Stages are passed through by the female germ cells that correspond a great deal to those described under spermatogenesis. The auxocytes or the early germ cells of the two sexes in mammals are, at first, nearly indistinguishable, except for differences in finest cytological detail. The early undifferentiated germ cells in the ovary are known as oögonia and correspond to the spermatogonia of the male. Later some of these cells, relatively few in mammals, undergo enormous enlargement during the growth period so that the fully grown primary oöcyte may be thousands of times larger than the corresponding spermatocyte of the male. While the extensive increase in size is due partly to the increase in amount of active cytosome, in many instances it is due largely to the increase in the amount of passive nutritive materials for the consumption of the developing embryo.

The behavior of the chromatin material, and later of the chromosomes themselves, during the prolonged prophase of the primary oöcyte is apparently similar to that in the primary spermatocyte, although research has not been nearly as extensive in this stage in the female. As a matter of fact, very little has been published on oögenesis in mammals, and for that matter in vertebrates, as compared with the extensive publications on spermatogenesis in these groups. Synapsis of homologous chromosomes takes place as in the male and the first oöcyte division is the reduction division. This division takes place in the following manner. The germinal vesicle, as the nucleus in these cells is called, moves to the periphery of the cytosome and there the mitotic figure is formed with the bivalent chromosomes in metaphase.

During the anaphase stage a small bud-like protrusion is formed at the surface of the oöcyte into which pass one half of the chromosomes and the other half or haploid number remain in the oöcyte which becomes the secondary oöcyte. The small extruded body with the other haploid number of chromosomes is the first polar body or polocyte. Thus the reduction division in the female results in two structures very unlike in size, the secondary oöcyte being many times as large as the polocyte. In case of heavily yolk-laden eggs, as in fishes and reptiles, they are thousands of times larger.

The first meiotic or reduction division which results in the throwing off of the first polocyte takes place within the Graafian follicle of the ovary. The second polocyte in mammals, presumably, as is well known in some of the lower forms, is not formed unless the secondary oöcyte is penetrated by a spermatozoan in fertilization and, therefore, is formed after the oöcyte leaves the ovary and enters the Fallopian tube.

The division of the secondary oöcyte, as is the case in the secondary spermatocyte, is equational and results in the formation of the small second polocyte and the relatively large mature ovum with the haploid or reduced number of chromosomes. The first polocyte also divides and thus from the primary oöcyte we finally obtain a single large mature ovum and three cast off polocytes as compared with the four fully formed sperms obtained from each primary spermatocyte. Only the ovum is capable of fertilization and the polocytes, as first suggested by Mark in 1881, are regarded as vestigial gametes or rudimentary eggs.

The maturation divisions and formation of polocytes are well known among the lower animals but only a comparatively few cases are on record for mammals. Kirkham has shown the polocyte formation in the mouse. In my own studies I have observed the formation of the first polocyte in a number of

mammalian ovaries and have been able to trace all of the stages in the formation of the first polocyte and the preparation for the second maturation division up to the metaphase stage within the Graafian follicles of the Columbian ground squirrel. These studies on the oögenesis in this rodent include accurate counts of chromosomes as well as their nature, leaving no doubt as to the stage of oögenesis they belong to.

Very few thorough pieces of work on human oögenesis have been recorded. The reason for this is obvious since favorable ovarian material is difficult to obtain. Sufficient material has been examined, however, to indicate that human oögenesis does not differ materially from that of other mammals, in spite of Hinselmann's ('27) conclusion that in man fertilization initiates both development and the maturation process since he was unable to see the first polar body of the human ovarian ovum in any ova taken from follicles about to rupture. On the other hand, Dixon ('27) records a human oöcyte showing the first polar body.

Sex-Determination

Why certain individuals are born male and others female has been a matter of interest and speculation for centuries. Numerous theories had been propounded, most of them being based on environmental factors such as nutrition, temperature, exercise, and others on mental impressions, religious acts, signs of the zodiac, and other categories too numerous to mention. The last part of the nineteenth century was replete with efforts on the part of those scientifically trained to identify the sex-determining agencies.

Early in this century it was learned that certain chromosomes bear the differential factors of sex, and although the most modern interpretation, regarding the animal kingdom as a whole, is that there is an interaction of both internal and external factors, it is safe to state that in mammals the most po-

tent factor is the internal or hereditary one.

In 1891 von Henking observed that a deeply staining body, which he thought might be a nucleolus, was present in half of the spermatids in certain insects. Later it was found that in reality the body was a chromosome and was named the accessory chromosome. McClung ('01) in working on the germ cells in insects was the first to suggest that the accessory chromosome exerts a special influence in the determination of sex, and the actual proof was furnished a few years later. Soon after this, it was learned that in those species of insects in which the male possesses one accessory, or X-chromosome, the female may possess two such sex-chromosomes. This condition is now known as the XO-XX type—a single sex-chromosome in the male with no synaptic mate and two such chromosomes in the female.

Research on this point was rapidly extended to higher animals and McClung's interpretation had been substantiated in many animals, including mammals, by many cytologists. For example, in cattle (Wodsdalek, '20) there are thirty-seven chromosomes in the male—thirty-six ordinary chromosomes or autosomes and one X-chromosome; in the female there are thirty-eight chromosomes—thirty-six autosomes, same as in the male, and in addition, two sex-chromosomes (Figs. 1-10). In the cat Winiwarter ('14) also found the XO-XX type with a total of thirty-five and thirty-six chromosomes respectively. A similar condition was found in the horse (Wodsdalek, '14), and in the albino rat (Allen, '18), although the cells of the females in these cases had not been studied as thoroughly as in the case of cattle.

It is obvious that if the X-chromosome has no synaptic mate in the male that it remains unpaired in the first spermatocyte and when reduction division takes place it passes to one pole undivided; therefore, the resulting secondary spermatocyte and subsequently the spermatids and the sperms

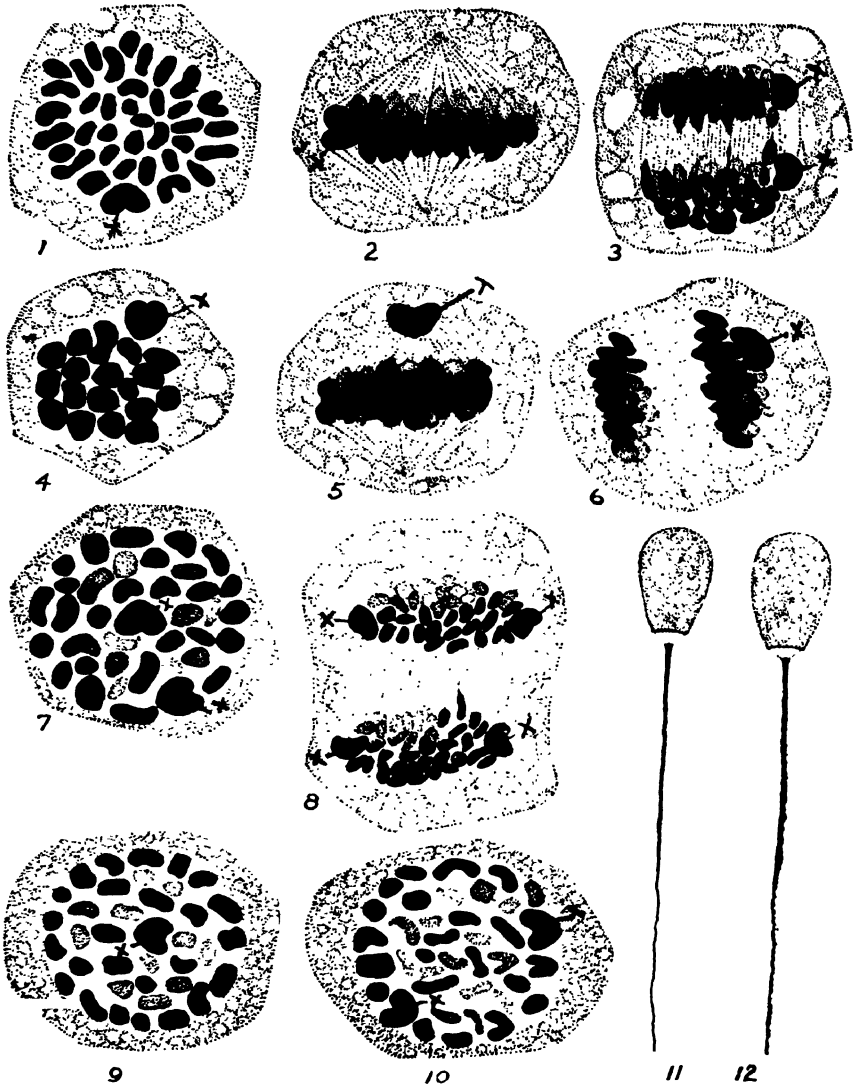


PLATE I

(All of the figures on this plate are of cells in cattle.)

1. Polar view of the metaphase of division in a spermatogonial cell showing thirty-six autosomes and the large X-chromosome. 2. Side view of the spermatogonial metaphase showing the thirty-six autosomes, and the X-chromosome at the left. 3. Late anaphase of division of spermatogonial cell showing the division of all of the chromosomes, including the X-chromosome at the right. 4. Polar view of the primary spermatocyte metaphase showing eighteen bivalent chromosomes and the unpaired X-chromosome. 5. Side view of primary spermatocyte showing the unpaired X-chromosome passing to one pole in advance of the other chromosomes. 6. Late anaphase stage of the reduction division of the primary spermatocyte showing eighteen chromosomes at one pole and eighteen plus the sex-chromosome at the other. 7. Late prophase of oögonial cell with thirty-six autosomes and two X-chromosomes. 8. Late anaphase stage of oögonial division selected to show division of the two X-chromosomes. 9. Liver cell in late prophase taken from a male foetus showing thirty-six autosomes and only one X-chromosome. 10. Liver cell in late prophase taken from a female foetus showing thirty-six

developing from them are of two types equal in number. One-half of the sperms contain the haploid number of autosomes plus the X-chromosomes (as in cattle—18 autosomes plus 1 X-chromosome) and the other half contain only the haploid number of autosomes and no sex-chromosomes (as in cattle—18 autosomes plus 0 sex-chromosomes).

In the case of the females in these mammals the germ cells contain two X-chromosomes which act as synaptic mates. Following the meiotic reduction division, therefore, every mature ovum contains the haploid number of autosomes plus the X-chromosome. (As in cattle—18 autosomes plus X-chromosome.) It naturally follows that the ovum fertilized by the sperm which contains the X-chromosome, will result in a zygote containing the diploid number of autosomes and two X-chromosomes which is destined to develop into a female individual. The ovum fertilized by the sperm lacking the X-chromosome will result in a zygote with the diploid number of autosomes but with only one X-chromosome (that contributed by the ovum) and, therefore, with the potentialities to develop into a male. This may be shown as it takes place in cattle:

$$\begin{aligned} &(\text{Egg}=18+X) + (\text{Sperm}=18+X) \\ &= (\text{Zygote}=36+XX) = \text{Female.} \\ &(\text{Egg}=18+X) + (\text{Sperm}=18+0) \\ &= (\text{Zygote}=36+XO) = \text{Male.} \end{aligned}$$

Another category of sex-chromosomes is the XY-XX type, first recorded, and their relation to sex suggested in insects by Wilson ('05) and Stevens ('05). In this condition the X-chromosome in the male has a synaptic mate which usually differs from it in size, shape, and structure, and is known as the Y-chromosome. It is usually much smaller than the X-chromosomes. The XY-XX type has been found in many animals including a number of mammals such as the mouse (Masui, '23), cat (Minouchi, '28), monkey (Painter, '23b), and in my own studies in several breeds of sheep, although some breeds display the XO-XX type. In man the XY-XX category was reported by

Painter ('23a), Evans and Swezy ('29), and others, while Winiwarter in a number of publications, the first of which appeared in 1912 and the latest, with Oguma, in 1926 and 1930, insists that the sex-chromosome complex in man is of the XO-XX type.

Male digamety exists in the animals belonging to the XY-XX type as in those of the XO-XX type. The difference is that in the XY- males the X- and the Y-chromosome are synaptic mates and, therefore, pair with each other preceding the reduction division. During the reduction division of the first spermatocyte the XY components separate at the point of pairing, as do the synaptic mates of the autosome tetrads, and pass to opposite poles of the first meiotic figure. This, obviously, results in two types of secondary spermatocytes and eventually dimorphic spermatozoa, one-half of which carry the X-chromosome and are female determining, as in the first category (XO-XX type), and the other half carry the Y-chromosome and determine maleness.

Wilson ('25) states that it appears almost certain that the XY type is the more primitive from which the XO type originated. This is clearly evidenced in the results of my studies of germ cells in several different breeds of sheep. In a certain breed the Y-chromosome is relatively large; in another breed it is noticeably smaller; in another it is very tiny, and in still another it is entirely lacking. Thus within this group of mammals there is a gradual disappearance of the Y-chromosome or the transition of the XY into the XO type.

Dimorphism among the sperms of those mammals belonging to the XO-XX type has been demonstrated in regard to size by measuring large numbers of sperm heads under the high power of the microscope and plotting the results in curves of variability to show the distribution of size frequency. This was first recorded in the case of the pig (Wodsdalek, '13) and later in the horse (Wodsdalek, '14) and in cattle (Wodsdalek, '20). The sper-

matozoa of these mammals vary noticeably in size and careful measurements show that they may be arranged in two classes, one type being distinctly larger than the other and undoubtedly possessing the X-chromosome (Text Fig. 1). Bimodal curves have also been recorded on various insects by Zeleny and Faust ('15a and '15b) and Goodrich ('16) on *Ascaris incurva* in which the X-chromosome is unusually large and a corresponding great difference in the size of the two classes of spermatozoa exists.

It may be of interest to note here that I did not obtain the bimodal curve among the spermatozoa of mammals possessing a small X-chromosome in the XO-XX complex, nor in the case of the XY-XX type. This is precisely what can be expected since the individuals of the two groups of sperms in the same animal vary considerably among themselves and, therefore, a slight difference in the amount of chromosomal material of the two groups, due to overlapping, cannot manifest itself in the form of a bimodal curve.

Mention should be made of the fact that not all of the categories of sex-chromosomes in the animal kingdom are of the one or the other type described above. Among invertebrates there are complexes of compound X components ranging from two to as many as eight in number. This is true of cases in which the Y-chromosome is absent as well as when it is present. The largest numbers recorded are in the nematode genus *Ascaris* (Goodrich, '14, '16). For a detailed account of this subject the reader is referred to Wilson ('25).

Still another variation shows a reversal of the sex-chromosome complex in the two sexes; so that the female is digametic and the sperms of the male are of one kind. To avoid confusion with the XO-XX and XY-XX types, Morgan suggested substituting W and Z for X and Y, i.e., ZZ=male and either ZO or ZW=female. This condition was revealed cytologically by Seiler ('13) in *Lepidoptera* and it shows a

close agreement with the genetic facts involving sex-linked inheritance in that order of insects. In the case of birds geneticists agree that evidence from the standpoint of sex-linked inheritance proves the female to be the sex-heterozygote. This, however, is not in harmony with Guyer's ('09a, '09b) cytological findings in the domestic fowl and the guinea hen in which he records the two kinds of sperms and the XO condition in the male. In more recent work on birds, however, Oguma ('27) reports XX in the male and XO in the female of *Columbia livia domestica*. Goldsmith ('28) records similar results in the "Domestic fowl," and Shiwago ('29) found ZZ in the male, and ZW in the female *Meleagris* sp. (Truthen-nen).

Sex-Linked Inheritance

While the subject of sex-chromosomes and their relation to sex-inheritance is under discussion, it seems desirable to make reference to the subject of sex-linked inheritance. The X-chromosomes not only carry genes for sex but also genes for the development of many other characters. There are many more characteristics in any species than there are chromosomes and it is known that many genes are located on the same chromosome. The characters represented by the genes of the same chromosome are said to be linked. They are always inherited together because of the segregation of entire paternal and maternal synaptic mates at the time of the reduction division, unless some occasional interference such as crossing-over takes place. The characters of the body other than sex, represented by genes on the sex-chromosomes are, therefore, referred to as sex-linked characters.

For our knowledge of linkage we are especially indebted to Morgan, Sturtevant, Bridges, and Müller, whose work on the fly, *Drosophila melanogaster*, during the past quarter of this century has been outstanding. These men together with their co-workers have definitely identified at least fifty charac-

ters which are sex-linked in *Drosophila*. Discussions of their work are found elsewhere in this *ENCYCLOPAEDIA*.

Sex-linkage has been reported in various vertebrates, especially in Pisces, Aves, and Mammalia. This form of linkage is well known in the heredity of hemophilia, color-blindness, and various other defects of the eye in man. For a review of the literature on sex-linkage in man the reader is referred to Davenport ('30).

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J. E. W.

GEMELLUS, a twin or twin-born; hence the plural *gemelli* (twins) is a term applied to the testicles.

Catullus (iv, 27): "gemelle Castor et gemelle Castoris."

GENERATIVE, creative; pertaining to procreation or the reproduction of the species.

Aristotle (*Historia Animalium*, v, 14): "In the human species, the male is generative, at the longest, up to seventy years, and the female up to fifty; but such extended periods are rare. As a rule, the male is generative up to the age of sixty-five, and to the age of forty-five the female is capable of conception. The ewe bears up to eight years, and, if she be carefully tended, up to eleven years; in fact, the ram and the ewe are sexually capable pretty well all their lives long. He-goats, if they be fat, are more or less unserviceable for breeding; and this, by the way, is the reason why country folk say of a vine when it stops bearing that it is running the goat. However, if an over-fat he-goat be thinned down, he becomes sexually capable and generative."

GENETICS, or as it is sometimes called, **MENDELISM**, is a new name for the older terms heredity and inheritance. Mendelism strictly means the laws of inheritance as discovered by Mendel in 1865, but it is often extended to include all later additions to our knowledge of heredity. In 1900 Mendel's long-forgotten paper came to light with the discovery of similar facts by three botanists, de Vries in Holland, Correns in Germany, and Tschermak in Austria. Three years later the same principles were shown to apply to animals by Bateson in England and by Cuénot in France. Great interest was aroused by these applications of Mendel's principles, and at present a large number of botanists and zoölogists, calling themselves geneticists, are studying the laws of inheritance, which have been shown to have wide application both to plants and to animals.

Mendel's principles, so called, may be described as the first law and the second law of genetics. The first law applies to a single pair of contrasted characters; the second law when two or more pairs of characters are involved in the same cross. The first law has been found to

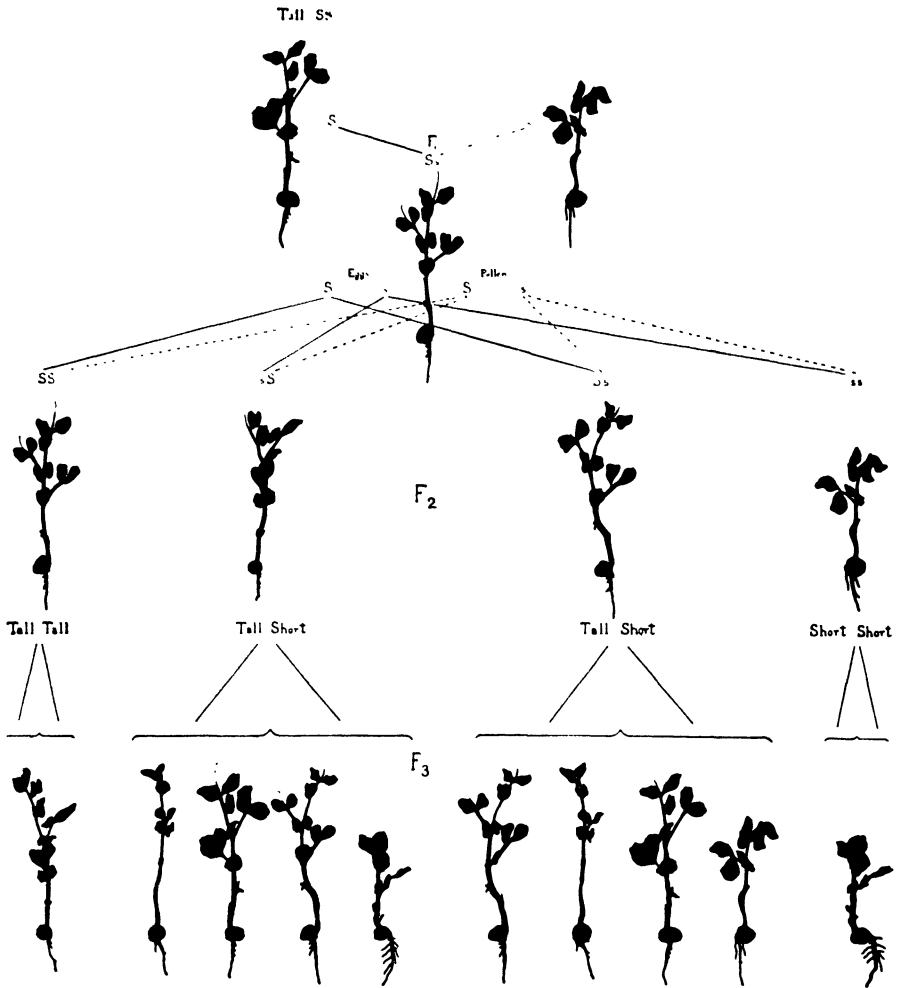


FIG. 1

Diagram illustrating the results of crossing a tall race of peas to a short race. F_1 is tall. F_2 is composed of 3 tall to 1 short. The latter, F_2 , when selfed reveal in F_3 that the F_2 generation is made up of 1 pure tall, to 2 hybrid tall, to 1 pure short.

have general application; the second has certain restrictions that were discovered later.

Mendel's first law may be illustrated by one of his own examples. When a tall pea is crossed to a short pea (Fig. 1), the offspring symbolized as F_1 are all tall peas. If these are self-fertilized (or inbred) the second generation offspring F_2 are in the ratio of 3 tall to 1 short. The short F_2 peas, if selfed, breed true; the tall F_2 are of two kinds in the ratio

of 1 to 2, namely, one tall that breeds true to two tall that split again into a 3 to 1 ratio. Mendel explained these results on the assumption that the tall pea carries in the ripe germ-cells an element for tallness, which he called the dominant character; and the short pea one for shortness, which he called the recessive character. The hybrid offspring receives from each parent one element of each kind (Fig. 2). In the germ-cells of the hybrid F_1 the two elements

separate, each germ-cell—whether egg or pollen-cell—gets one or the other element, not both. If now any egg may be fertilized by any pollen grain there will be three kinds of recombinations in the ratio of 1 to 2 to 1, as shown in the diagram.

by any pollen grain gives sixteen combinations, as shown in the diagram. The presence of the dominant yellow element gives a yellow pea, and the presence of a round element gives a round pea. Thus the combinations will fall into four classes in the proportion of 9 yellow

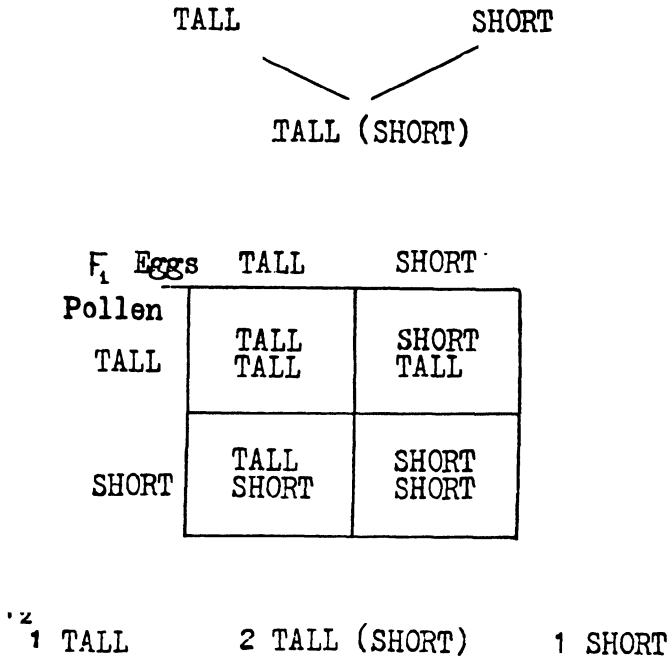


FIG. 2
Diagram illustrating the results in the first (F₁) and second (F₂) generation when a tall pea is crossed to a short pea. In F₂ there are 3 talls to 1 short.

Mendel's second law applies to two (or more) pairs of contrasted characters entering a cross, as, for example, when a yellow seeded pea with round seeds is crossed to a green pea with wrinkled seeds. Here yellow and green are one pair of characters, and round and wrinkled the other pair. Each pair follows, in the hybrid F₁ the first law, but the pairs behave independently of each other. The result, as shown in the diagram (Fig. 3) gives four kinds of egg-cells and four kinds of pollen-cells, namely, yellow round, yellow wrinkled, green round, green wrinkled, in equal numbers. The fertilization of any egg

round: 3 yellow wrinkled: 3 green yellow: 1 green wrinkled.

At the time when Mendel published his results there was no mechanism known that would explain how the characters in the hybrid were separated ("segregated") into different germ-cells, but during the last half of the century the behavior of the chromosomes, especially at the time of maturation of the germ-cells, was gradually worked out. It was not until 1903 that Sutton pointed out that the changes taking place in the last stages of maturation of eggs or sperm-cells furnish a mechanism which explains the segregation and as-

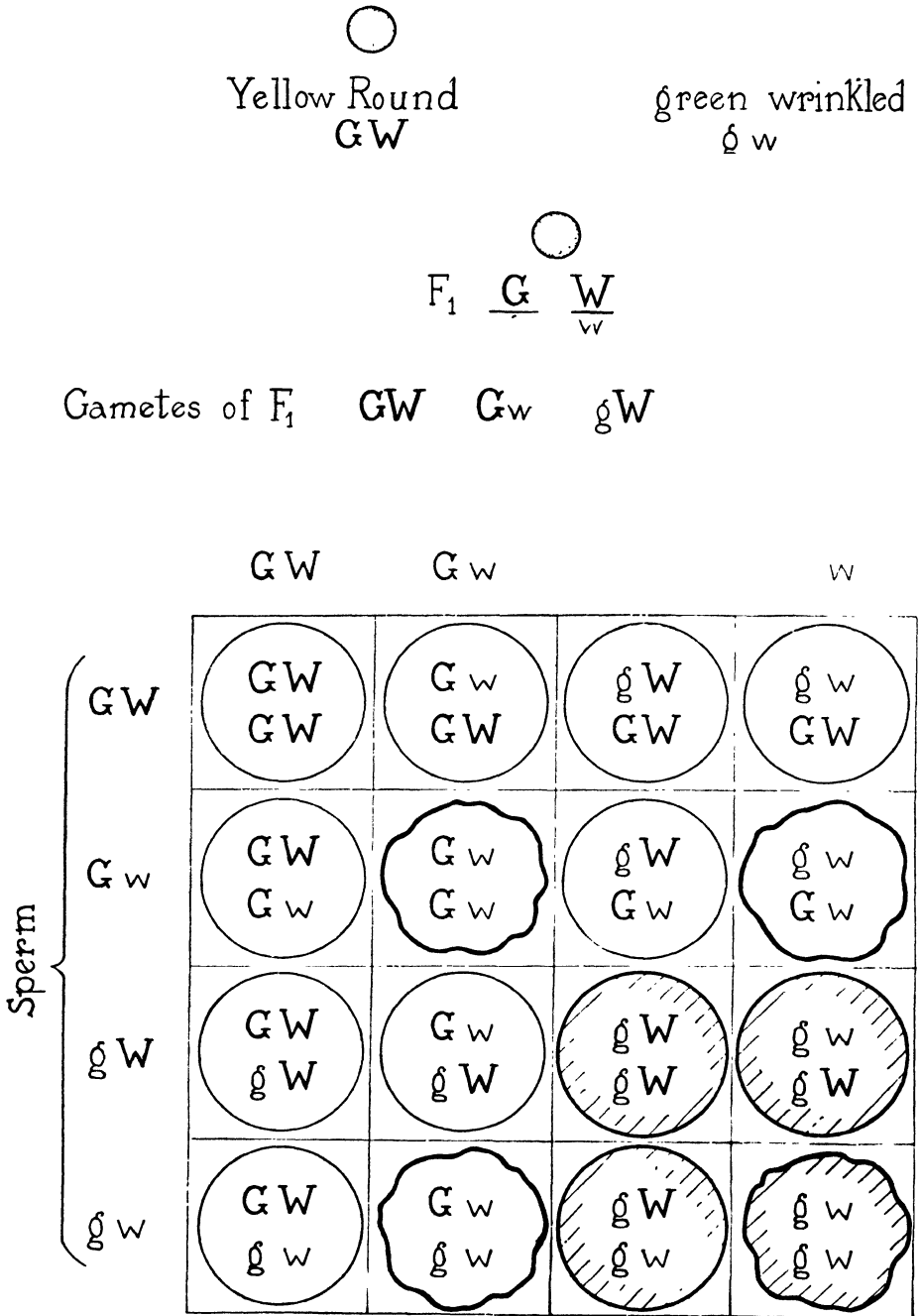


FIG. 3

Diagram illustrating Mendel's second law when two pairs of characters enter the same cross, viz. yellow round and green wrinkled peas. In the second generation there are 9 yellow round (GW) to 3 yellow wrinkled (Gw) to 3 green round (gW) to 1 green wrinkled (gw).

sortment of Mendel's postulated elements.

Just before the last two divisions of the germ-cells the chromosomes come together in pairs; then at one division they separate, one chromosome of each pair going to one daughter-cell, and its mate to the other daughter-cell. Hence, if the chromosomes are the bearers of the hereditary elements, or the genes as they are called to-day, the elements of each pair will be segregated. If the elements lie in different pairs of chromosomes each pair separates independently of the other pairs. This accounts for Mendel's second law.

There is abundant evidence to-day from several sources that the chromosomes are the bearers of the genes, and that the chromosome mechanism suffices to cover not only Mendel's two laws but

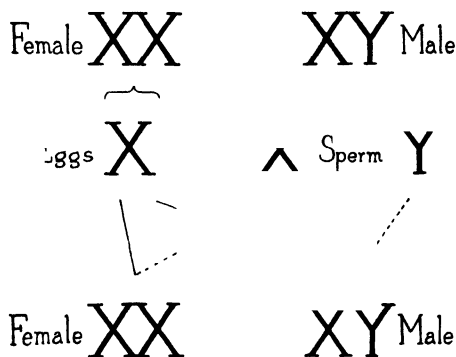


FIG. 4

Diagram illustrating the determinations of sex by means of the sex chromosomes, viz. X and Y. The female is XX, the male XY. The eggs after extrusion of one X in the polar body retain one X. There are two kinds of spermatozoa, X and Y. Any egg fertilized by an X-sperm becomes a female. Any egg fertilized by a Y-sperm becomes a male.

some of the later discovered laws of genetics. The same mechanism suffices also to account for sex determination in those animals (including man) and in those plants that have separate sexes. For example: in man the female has two special chromosomes called the X-chromosomes; the male has the X- and another called the Y-chromosome (Fig. 4). When the egg matures one X goes into a polar body and is lost; the other

remains in the egg—hence each ripe egg has an X. The male has one X and its partner, the Y-chromosome (Fig. 4). When the sperm-cell passes through its maturation divisions, the X goes to one cell, the Y to the other cell, therefore each sperm has an X or a Y. If an egg is fertilized by an X it becomes a female (XX); if an egg is fertilized by a Y-sperm it becomes a male (XY). The X-chromosome carries genes, as do all the other chromosomes, but the Y is deficient in genes, or possibly in some types carries none at all. Sex-linked inheritance, so called, becomes explicable on the sex-chromosome mechanism. For example: the gene for hemophilia is carried by the X-chromosome. If a man having such an X marries a normal woman, her daughters will not be hemophilic, because they have received one normal X from their mother which dominates the gene in the X for hemophilia received from the father. On the other hand, if a daughter marries a normal man, half of her sons get a normal X, the other half the other X carrying the hemophilic gene. Thus half of her sons will be bleeders and half of her daughters will carry the gene for hemophilia but not show it. There are several other sex-linked genes in man; the most familiar is the gene for red-green color-blindness.

There is abundant evidence that each chromosome carries hundreds of genes. Those carried in the same pair of chromosomes will tend to go together in succeeding generations. They are said to be inherited together—hence the law of linkage which states that genes in the same chromosomes tend to be inherited together. If, for instance, a white-eyed male fly (*Drosophila*) with yellow wings (the gene for white and that for yellow are in the X-chromosome) is mated to a fly with red eyes and gray wings (Fig. 5), (these genes are also carried in the X-chromosome) the female offspring will show the two dominants, red eyes and gray wings. Now, if such a female is bred to a male with white eyes and yellow wings, about half the offspring

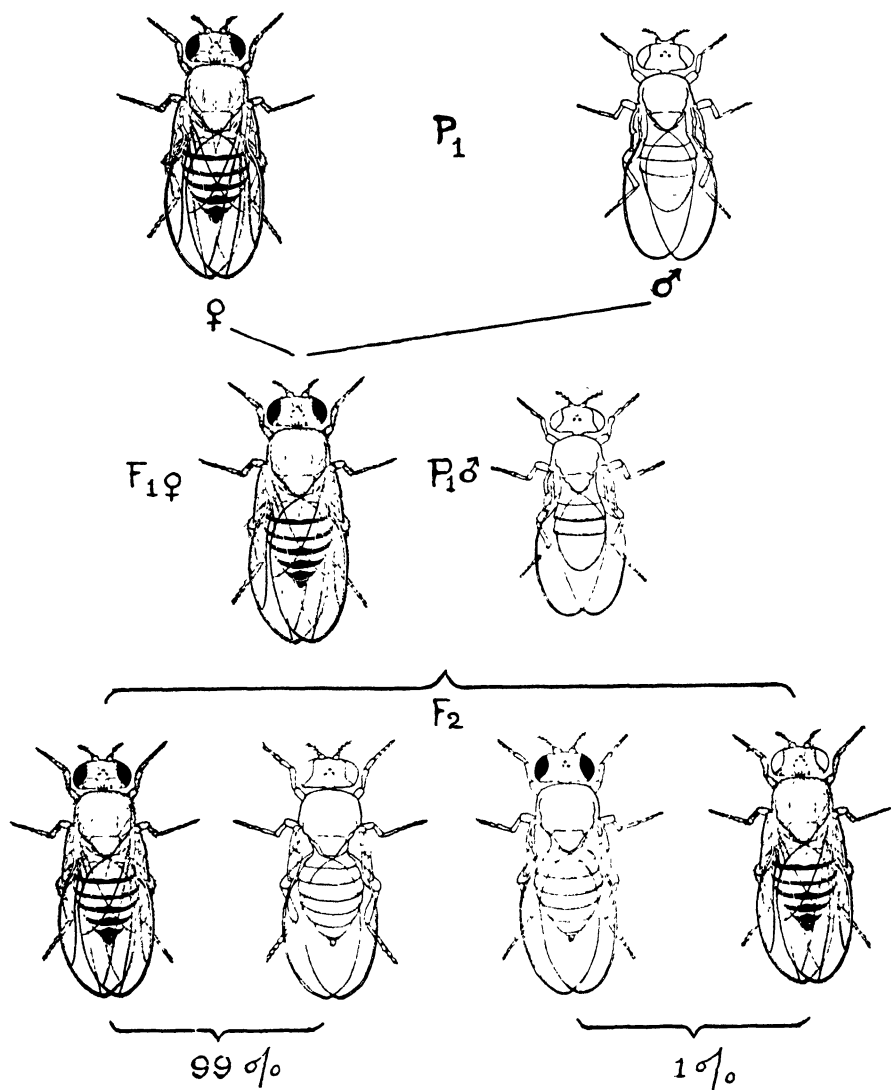


FIG. 5

Diagram illustrating crossing over in *Drosophila*. A female with gray wings and red eyes is bred to a male with yellow wings and white eyes (P₁). The daughters (F₁) have gray wings and red eyes (like the mother). Such a daughter is back-crossed to a male like the father. Their offspring (F₂) consists of 99% of females having the two grand-parental characters, viz. yellow wings and red eyes and gray wings and white eyes.

will be red-gray, and the other half white-yellow. This means the genes that entered the cross together have come out together in the grandchildren. In a word they are linked.

The next step in the history of ge-

netics was the demonstration of the law of crossing over, which in turn places limitations on the linkage law just as the latter limits the application of Mendel's second law. In the above case it was stated that *about* half of the grandchil-

dren are red-gray and about half are white-yellow, but in fact there will be a few individuals (about 1%) that are red-yellow or white-gray. These few flies are due to interchanges taking place between the two members of the pair of X-chromosomes of the mother. If we represent the two chromosomes by two rods (Fig. 6) and assume when they come together that they overlap between the red-white level Aa, and the gray-yellow level Bb, and then exchange

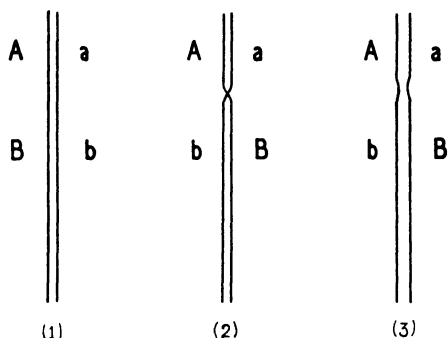


FIG. 6

Diagram illustrating interchanges (crossing over) between the members of a pair of homologous chromosomes, viz. AB and ab. The two resulting chromosomes are respectively Ab and aB.

pieces, the two new X's that result will contain respectively the red-yellow Ab genes and the white-gray genes aB. These are the new combinations that appear in a few of the grandchildren in such a cross. This interchange of parts is called crossing over.

The amount of random crossing over that takes place between homologous pairs of chromosomes is on the average fixed, and the chance that it may happen will be greater if two pairs of genes are far apart and less if they are near together. On this basis it was possible to discover the relative location of the genes in the chromosomes, and to give the location of each gene a numerical value, starting from any arbitrary point of the chromosome. With data of this kind it is possible to predict the kind of offspring produced in any combination of genes, and the relative numbers in

which each kind is expected to appear.

In man there are hundreds of cases in which certain inherited characters, both structural and physiological, have been recorded from family pedigrees. Aside from the few characters that are sex-linked and referable to the X-chromosome, the identification of the other characters with any specific chromosome is at present not possible owing to the absence of known linkages amongst the genes. There can be little doubt that linkages exist, but until two or more known genes are discovered in the same linkage group and in the same cross it is not possible to refer the known characters to specific chromosomes of which there are 46 in man besides the sex-chromosomes.

It is recognized that each kind of gene produces more than a single effect on the individual, i.e., it produces several or many recognizable characters. For genetic work only one of these is selected as a rule, usually the one that is more easily recognized, but some of the physiological effects of the same gene may be more important for the welfare of the individual than the character chosen for the identification of the gene.

There may also be several modifications of the same gene, each giving rise to a slightly different end-result in the same character. These are called multiple allelomorphs. Each set has the same location in the chromosome. Only one or the other of them may, of course, exist at the same time in a given chromosome, and therefore only two in the cells of the body of a normal individual. There are also genes whose influence is principally on the character produced by other mutant genes.

In fact, it is one of the recognized principles of genetics that all the genes are directly or indirectly concerned with the production of one or of all the characters of the individual. The last relation can best be illustrated by the rôle of the genes in sex-determination. The female characteristics are determined by the reciprocal action between genes in the X-chromosome and those in the rest

of the chromosomes, the so-called autosomes. When, as in the female, two X-chromosomes are present, the balance is in the female direction. The sex of the male is determined by the balance between the single X and the rest of the chromosomes.

At the present time no specific genes, either in the X's or in the autosomes, have been discovered that can be identified as special genes for sex. Whether some genes have a more important influence on these relations than have others is not certainly known. The Y-chromosome that is confined to the male line does not appear to have any influence on sex-determination, at least not in the best known cases, but it is not improbable that in other cases it may carry genes that are factors in the determination of sex, or of other characters.

While the sex mechanism works automatically and regularly under ordinary conditions there are situations in which it may be modified, both by external and by internal factors that may change the ratios, or produce unusual or abnormal types of sex. A few examples of these unusual cases may illustrate the principles involved.

There are a few animals which may function first as one sex, then as the other. Some species of oysters are successively male and female. Here internal (age) or external factors determine the succession. Certain fish may develop testes first and later ovaries, functioning as males first, then as females. Age is here a factor in determining the time of ripening of sperm or eggs, but the nature of this age-factor is undetermined. In the amphibia where a sex mechanism is probably present, the problem is more involved.

In certain races of frogs there develops very early a sort of ovotestis. The central cells of the sex organ of frogs are potentially sperm cells, owing to their location rather than to any genic or chromosomal difference. But the chromosome complex determines, later on when the organs mature, whether the outer or the inner cells become func-

tional germ-cells. Hence males and females are produced in the end in approximately equal numbers. Other races of frogs develop more directly into males and females. Special conditions may, in the former case, suppress or hold in check the outer or cortical layer of the indifferent gonad, in which case the internal or medullar cells may develop into functional sperm, and vice versa for the cortex cells—hence in a sense there is a reversal of sex.

But in a more profound sense the exceptions prove the rule. For example: in a few cases adult frogs have been found in which both an ovary, or part of one, and a testis, or part of one, are present. These individuals are potentially, i.e., genetically (XX) females. Here each ripe sperm should contain one X-chromosome, and if this sperm is used to fertilize the eggs of a normal female only female offspring should be produced. In fact, this is what occurs. In such cases the chromosomal mechanism of sex-determination still functions, even though other conditions have made possible the development of a testis in a genetic female.

In other words: while the sex-mechanism carries on under normal conditions it may be reversed under special conditions. But, even after reversal, the sex cells are found to retain their normal relations with respect to initiating one or the other sex when the conditions become normal.

A similar relation has been found in plants with separate sexes, such as hemp. Here a female plant may occasionally produce pollen, and the pollen has the same genetic composition as the ovaries of the female, i.e., they produce only females.

In one of the insects, *Miastor*, the larvae produce eggs that give rise by parthenogenesis to new larvae, and this process may continue for several generations. After a time, owing to changes in the environment, the last generation of larvae becoming winged adult females that contain sexual eggs that must be fertilized in order to develop,

and winged males that produce sperm. The cycle begins over again with the larvae developing from the fertilized eggs of the sexual female. If each larva be isolated it will be found that all the successive parthenogenetic larval generations that come from one fertilized egg give rise ultimately to males, and those from another egg to females. This means that larvae that are potential males in their chromosomal make-up produce parthenogenetically developing eggs in the larval stage. The case is the more striking since the XY mechanism is present in these flies.

In ants, bees and wasps the unfertilized eggs produce males, the fertilized eggs produce females. This case has long been a puzzle, since the chromosome balance is the same in the male and female. It has recently been found, however, that in wasps there are two kinds of males, X^+ and X^0 , and that the female containing both X 's is due to complementary factors in the two X 's which combined give the female. Separately each X , lacking the one or the other dominant female factor, produces only a male.

In mammals, including man, the chromosome XX-XY mechanism produces approximately equal numbers of the two sexes. The excess of males (106%) at birth has not yet been explained except by subsidiary hypotheses depending on behavior of the X-bearing or Y-bearing spermatozoön.

There are a few outstanding abnormal situations in mammals, the most interesting of which is the origin of the free-martin. Occasionally twin calves are born, one of which is a male and the other genetically a sterile female more or less modified in the male direction—the free-martin. It has been shown that the latter owes its origin to an early anastomosis that has taken place between the blood vessels of the membranes of the two embryos. A hormone from the developing testis of the male interferes with the development of the ovary and accessory ducts of the co-twin. The suppression of the ovary may go so far

as to make possible the development of a testis-like organ in the co-twin or female individual.

Intersexual individuals are known in the goat and pig and man that have a different origin from the intersexual free-martin. In certain races of goats mixed gonads and ducts are quite frequent. There is some difference of opinion as to whether these "hermaphrodites" are partially transformed males or females; but the latest view is that these individuals start with the female sex-formula. The frequency of their occurrence in certain localities makes it very probable that there is a genetic factor or factors responsible for the upset of the normal development. Such genes have, in fact, been discovered in *Drosophila*.

In birds it has long been known that a tumor developing in the ovary may cause the female to develop, after moulting, the characteristic plumage of the male, spurs and male type of comb. Removal of the ovary brings about the same result, and, if the removal takes place in a young chick, a testis develops at the site of the removed ovary, and one also in place of the rudimentary right ovary. In extreme cases spermatozoa may develop in these regenerated testes whose origin can be approximately traced to precursors of these organs in the early development; for, birds, like mammals and other vertebrates, show in the earliest stage of their development the rudiments of male and female gonads and accessory ducts.

The development of the testes in the male holds back the development of the female gonad and ducts, and conversely for the female. When the ovary or testis is completely removed from a genetic female or male an opportunity for the development of the suppressed organs of the other sex is present. Hence the anomaly of an individual with the genetic composition of a male developing an ovary, and the ovary in turn, through the production of hormones, induces the development of the

characters of opposite sex. Conversely for the female.

There are many cases that are generally spoken of as hermaphrodites and pseudo-hermaphrodites in man. Goldschmidt's recent analysis of these cases makes it highly probable that they are better described as cases of female heterosexuality. When the turning point has been very early in development, a testis with spermatocytes may be present in the gonad of such a genetic female. Male intersexuality does not seem to occur in man, and this is supposed to be due to the disappearance of the cuticle layer of the testis from which eggs develop in the female at an early stage of embryonic development.

It is important not to confuse these cases of intersexes with the pathological condition known as hypospadias of the phallus, which is a dominant genetic condition. There are also other cases of abnormal development of the external genitalia both in women and in men due to tumors, etc., of the adrenal or of other glands.

In general the humoral action of the glands of internal secretions of the testes and ovaries in conjunction with the internal secretions of other hormone-producing glands may account for many of the abnormalities that involve the reproductive system; for in man, as in other mammals and in birds, these secretions also play a rôle in the final development of the reproductive system in conjunction with or in opposition to the determination of sex by means of the sex chromosomal mechanism.

T. H. M.

GENETICS, DEFINITIONS IN.

Acquired characters. Literally an acquired character is one that an individual may develop or have impressed on it from without. For example, the muscles of a blacksmith's arm enlarge through strenuous use; the human skin becomes darkened by the development of pigment, when exposed for some time to sunlight. It is only in connection with the theory of the *transmission of acquired characters* that the term has come to have a special and unfortunate significance (see *Transmission of Acquired Characters*).

Allelomorph, or Allel. One member of a pair of genes having the same location in the chromosomes. Since most animals and plants are diploid, one allelomorph has been derived from one parent (paternal), the other from the other parent. One allelomorph is usu-

ally dominant to the other (the recessive), but in many cases the characters of the heterozygous individual are intermediate between the characters of the dominant and recessive types.

Amphiasier. In mitosis there is generally present a spindle-shaped figure in the cytoplasm with asters at the poles of the spindle. The entire figure is called an amphiasier.

Amphigony. Sexual reproduction in which typically males and females are involved.

Amphimixis. A term used by Weismann to signify the mixture of the elements derived from the two parents.

Anaphase. The condition of the mitotic figure after metaphase, when the daughter chromosomes have begun to migrate to opposite poles.

Apogamy. The development of a seed or plant vegetatively without the union of gametes. A term used principally for seeds of flowering plants arising from a cell in the ovary that is not the normal egg. (See also *Parthenogenesis*.)

Asexual reproduction. In contrast to sexual reproduction. Several methods are recognized, such as buds (hydra and plants), self-division (worms), spores (plants), and parthenogenesis (plants and animals).

Autosomes. Ordinary chromosomes, as distinguished from the sex-chromosomes.

Biophores. Hypothetical vital units. A term used by Weismann. Similar to the pangenes of Darwin.

Bisexual. A term applied to species (not to individuals) in which males and females are present as separate individuals.

Bivalent. A double chromosome formed in meiosis by the conjugation of a pair of homologous chromosomes.

Capon. A male fowl whose testes have been removed. Equivalent to eunuchs in man.

Castration. The removal of the testes of the male, producing a eunuch in man.

Centrosome. The center of the aster at the pole of a mitotic figure. The

centriole is a small stainable body in the center of the centrosome.

Chiasmatype. The crossing over figure between homologous chromosomes at meiosis.

Chromosomes. Stained rods or spheres that are seen when nuclei undergo division. They are regarded as the bearers of the hereditary units or genes that lie in linear order in the chromosome.

Cock-feathering. The plumage of the male fowl, or rooster. After removal of the ovary of the female fowl she assumed the cock-feathering.

Conjugation. A term applied mainly to the union of two individuals in unicellular plants and animals. Also it is applied to the union of spermatozoön and egg, and sometimes to the coming together of homologous chromosomes in the maturation process of multicellular forms, both in oögenesis and spermatogenesis.

Cross-fertilization. When the egg of one individual is fertilized by the sperm of another individual it is said to be cross-fertilized.

Crossing over. A term used in genetics for the interchanges between homologous chromosomes. (See Chiasmatype.)

Cytoplasm. The protoplasm of the cell as contrasted with the contents of the nucleus (nucleoplasm and chromosomes).

Diocious. Species in which male and female organs are borne on different individuals. Applied especially to flowering plants.

Diploid. The full number of chromosomes of an individual, which usually consists of pairs of homologous chromosomes, one member of each pair coming from the father, the other from the mother.

F₁. A Mendelian abbreviation for the first filial generation of a Mendelian cross.

F₂. A Mendelian abbreviation for the second generation of a Mendelian cross.

Fecundity. The ability to produce eggs or sperm as contrasted with sterility.

Fecundity is a general term applied to a group as a rule, while sterility applies more often to individuals of certain kinds.

Female. An individual with ovary. Other characteristics are also, as a rule, associated with the female sex.

Fertilizin. A substance set free from eggs. It has been supposed to play a rôle in fertilization.

Fertility. Relates to the ability of individuals to produce offspring, and often refers to a comparison with the average rate of reproduction of the group.

Fraternal twins. Two individuals born at the same time. They arise from two eggs fertilized each by a different spermatozoön. They resemble each other on the average no more than they do other children of the same parentage (see identical twins).

Free-martin. A genetic female that is the co-twin of a male. Free-martins occur mainly in cattle. The individual is sterile owing to the incomplete development of the ovary and female genitalia. In extreme cases testes or testicle-like bodies may replace the ovaries. It is known that this condition is due to anastomoses between the blood vessels of the embryonic membranes. It is supposed that hormones in the blood of the male co-twin suppress the development of the ovary of the female co-twin.

Gametes. Eggs or spermatozoa. The sex-cells of an individual.

Gene. The postulated unit of Mendelian heredity. The genes lie in linear order in the chromosome. Collectively the genes are responsible for the characters of the individual. A change in one gene by mutation may bring about changes in the characters of the adult. The major one of these changes is usually chosen to define the character which gives a name to the gene. Each gene acts, however, only as a differential in the end-product of all the genes.

Genotype. The individual as expressed in its gene make-up.

Germplasm. A term used by Weismann to indicate that part of the cell that carries the total properties of the

species. The term is vague and is being replaced by more specific definitions. The chromosomes are today regarded as the equivalent of the germplasm.

Gonad. A name for ovary or testis, or even for an ovo-testis. In general it means the essential reproductive organ apart from its accessories.

Gonodectomy. Removal of the gonad, either testis or ovary.

Gynandromorph. An animal of a bisexual species that shows characters of the other sex; these may be eggs and sperm, but more often secondary sexual characters. In recent literature the term is restricted to individuals that have in some parts the female sex-chromosome composition (XX); in other parts the male composition (XY or XO).

Haploid. The reduced or gametic number of chromosomes in contrast to diploid.

Hen-feathering. A term applied to the males of certain races of fowls (in the Seabright race) whose plumage is like that of the female.

Hermaphrodite. In zoölogy an animal with eggs and sperm and genitalia to correspond. The word is sometimes used for an exceptional individual of a bisexual species which contains both eggs and sperm. In man and some other mammals hermaphrodites are properly intersexes (see definition).

Heterogametic, or Digametic. An individual with gametes of more than one kind, especially applied to sex-production.

Heterosis. A condition in which the genes derived from the two parents are different in several or many alleles. Sometimes this results in general vigor or growth, as well shown in Indian corn.

Heterozygous. An individual (diploid) in which the members of a pair of genes, or more than one pair, are unlike genes; one of the two is usually the dominant and the other the recessive gene. One may be the gene of the wild-type, the other a mutant type, or the two may be mutant allelomorphs.

Homogametic. Having gametes of

but one kind with respect to sex-reproduction.

Homozygous. An individual (diploid) in which the members of a pair of genes, or more than one pair, are identical.

Hybrid. Originally an individual resulting from a cross between species. Now the term is frequently used for the first generation offspring (F_1) of a Mendelian cross in which one or more contrasted genes are present.

Identical twins. Two (or more) individuals arising from the same egg fertilized by a single spermatozoön. Since these individuals have exactly the same genetic composition they are very similar, more so on the average than fraternal twins. They also are either both males or both females.

Inbreeding. When closely related individuals are bred to each other the stock is said to be inbred. Technically inbreeding is called endogamy (see outbreeding).

Insemination. The act of fertilizing the egg by the sperm.

Intersex. An animal showing both male and female characters. Instead of sharply defined regions of male and female characters, as in gynandromorphs, there is rather a tendency for each part to be intermediate in character. The distinction between intersexes and gynandromorphs is not always sharp, and depends rather on the theoretical interpretation of their different origins than on visible distinctions. Moreover, there are recognizable several kinds of each type. The free-martin in cattle is a typical intersex (see definition). There are a few races of goats that frequently produce intersexual individuals. Intersexes produced by parasites are found in crustaceans and in some insects. In birds and mammals intersexual individuals can be produced by gonadectomy. In all of these cases the individual has the genetic composition of female or male (XX-XY) but other factors have secondarily changed the gene-balance. Some of the most striking cases of in-

tersexes are hybrids, especially moths, arising from crosses between different varieties or races.

Karyokinesis. An older term now largely replaced by mitosis. The kind of division by which most cells increase in number. The process involves essentially the separation of daughter chromosomes that have arisen by a longitudinal split in each chromosome. Each daughter cell receives one of each of the daughter chromosomes.

Male. An individual with testis. Sometimes the term is erroneously applied to the spermatozoa. These may be either male-determining or female-determining.

Maternal Impressions. The supposed influence of the mental state of the mother on the physical condition of the offspring *in utero*. This ancient and malicious doctrine has been entirely disproven, and is not in accord with modern views on the nature of hereditary factors. The rare coincidences that happen when some abnormality or other trait of the child is referred to some experience the mother has met with (some strong or unusual emotion, for example) has served as the basis for this myth. Fortunately such mental conditions of the pregnant mother can have no such direct connection with the physical traits of the offspring. Were it true the world would be filled with abnormal creatures.

Matroclinous. More like the mother.

Maturation. Usually applied to the final stages of ripening and division of eggs and sperm-cells. (See Meiosis.)

Meiosis. The processes that take place at the maturation divisions of eggs and sperm-cells. The number of chromosomes is reduced from diploid to haploid.

Merogony. The fertilization of a non-nucleated piece of egg by a spermatozoön; comprising also the development of the fragment.

Metaphase. The middle stage of mitosis when the chromosomes come to lie in the equator of the spindle.

Mitochondria. One of the kinds of

granules (chondriosomes) present in the cytoplasm of the cell.

Mitosis. A more recent name for karyokinesis or indirect cell-division.

Monoecious. A term applying to species that have both sex-organs, especially applied to plants with pistils and stamens.

Oöcyte. An egg before the maturation process has taken place.

Oögenesis. The whole series of changes taking place in the development of eggs in the germ-track.

Outbreeding. When unrelated individuals are mated to each other, i.e., consanguinity is avoided. (See Inbreeding.)

Pangene. One of the ultimate units of the nucleus and cell. (See Pangenesis.)

Pangenesis. Darwin's theory to explain the inheritance of acquired characters. The pangenes are conceived as the determiners of hereditary characters and are supposed to originate in the somatic cells and to be carried thence to the germ-cells by the blood stream.

Parthenogenesis. The development of eggs without fertilization. This occurs as a regular process in certain types, and occasionally in others. It may be brought about by artificial means, either chemically by salt solutions, acids or alkalis; physically by puncture, heat or cold, or by osmotic changes. The embryos produced may be either diploid or haploid.

Patroclinous. More like the father.

Phenotype. The expressed characters of an individual without reference to its genotype.

Polar body. The name for each of the two minute cells sent off by the egg in the final stages of its maturation. Each division is a mitotic one. The egg is left with the haploid group of chromosomes.

Polyembryony. The production of more than one embryo from a single, fertilized egg. (See identical twins.)

Polyploid. A polyploid individual is one having more than the usual (diploid) set of chromosomes.

Poulard. A female fowl whose ovary has been removed.

Pronucleus. The haploid nucleus of the egg and also the sperm-pronucleus that develops in the egg from the head of the spermatozoön.

Protoplasm. The living substance of the cell. Sometimes in contrast to nucleoplasm.

Pure line. A race, all of whose individuals have identically the same genes, i.e., none of the individuals are heterozygous and all the genes are alike.

Reversal of sex. See Sex Reversal.

Reversion. In the older literature the occasional appearance of a character not present in the immediate parents, but present in some known or assumed ancestor, was called reversion. Today most of these cases are explained by recombination of recessive factors carried by the parents. Reversion can be brought about, at will, in selected genetic experiments. There are in addition a few cases where a gene does revert to the original condition present in the ancestry.

Self-fertilization. When the sperm of a hermaphroditic plant or animal fertilizes its own eggs, the egg is said to be self-fertilized.

Semen. The ejaculated spermatozoa, including the fluids with which they are mixed. Especially applied to the vertebrates.

Sex. The terms male and female sex are applied to the two kinds of individuals present in many species, and carry the implication that the individuals reproduce sexually, i.e., by the union of eggs and spermatozoa. In some groups of animals the female has two X-chromosomes and the male an X- and a Y-chromosome (see Heredity). In other groups the female has one X- and the male an X- and a Y-chromosome. In both equal numbers of the two sexes are expected. Typical hermaphrodites have both ovaries and testes and combine both sexes in the same individual. Species that develop by parthenogenesis, at least in certain stages of their life cycle, develop without being fertilized.

Such females are spoken of as parthenogenetic females in contrast to sexual females. In more technical language sex refers to individuals, male or female, and includes the superficial distinctions (as well as the more fundamental ones) that distinguish the male sex from the female sex.

Sex-determination. The internal relations or external conditions that determine whether a male or a female develops. Usually it relates to the conditions present after fertilization (see Sex); at other times to environmental factors, and in parthenogenesis to the kind or number of chromosomes that are present. Parthenogenetic eggs generally give off only one polar body and retain the total number of chromosomes, while in sexual forms two polar bodies are extruded. In a few cases (bees and rotifers) the parthenogenetic egg gives off two polar bodies and the embryo develops with the half number (see Haploid) of chromosomes.

Sex-dimorphism. A condition in which the male and female are structurally different. The term is used for sex differences, usually external, other than those connected with the genitalia or internal organs.

Sex-ratio. The numerical relation of the sexes, either at birth or in the population of different ages or of different races, is called the sex-ratio. It is usually given as the number of males per hundred females, or else in the percentage of males. Where the XX-XY sex mechanism is present, equal numbers of males and females are expected, provided the two kinds of spermatozoa have an equal chance of reaching and fertilizing the egg, and provided there is no selective process taking place. Furthermore there is the possibility that one or the other sex may die more often before birth (in man) thus changing the expected equality. Other conditions also may affect the sex ratio, especially that of hybrids. In most mammals there are at birth a few more males than females. In man the sex-ratio is about 106 males to 100 fe-

males at birth. The human pre-natal or foetal sex-ratio is much higher (as determined from abortions and still-births), running as high as 142 males to 100 females, which means that more males than females are conceived. The explanation of this departure from a one-to-one ratio is obscure. The higher mortality of the males *in utero* may be due in some cases to lethal factors that are sex-linked. The sex-ratio changes after birth, owing at first to the higher mortality of males. Between 10-15 years more females die, giving a ratio of 94.3 to 100. After this there is a continual drop. In old age the sex-ratio is only 55.2 : 100, owing to the great mortality of males.

Sex-reversal. When it is stated that the difference between male and female is due to a different balance between the sex-chromosomes and the rest of the chromosomes (the autosomes), it is with the reservation that this takes place in the environment normal for the species. This balance may be upset or even reversed by internal or external factors. For instance: if the left ovary of a female chick is removed, the right ovary, that is normally rudimentary, becomes a testis and in extreme cases the testis may become functional resulting in the development of the secondary sexual characters of the male (comb, wattles, spurs, plumage). The external environment may also determine whether an embryo develops into a male or female, as in the worm *Bonellia*, and in certain races of frogs and in some plants (hemp), even when as in the latter case a sex chromosome mechanism is present.

Sexuality. A general term for organisms producing eggs fertilized by spermatozoa.

Sibs. A word not much in general use today, but a convenient expression for children of the same parents. They may be boys, or girls, or both.

Spermatocyte. A cell of the testis before the maturation process has taken place.

Spermatogenesis. The whole series

of changes (including meiosis) that take place in the development of spermatozoa in the germ-track of the male (or in the testes of hermaphrodites).

Sterility. Means generally the failure to produce offspring. It may mean that fewer offspring are produced than are produced by the average of the race. Sterility often means the absence of fertility. A sterile individual (male or female) is one that produces no fertile gametes.

Syngamy. The union of male and female gametes or sex-cells.

Telegony. The supposed influence of a male, that had previously been mated to a female, on later offspring of the same female by another male, i.e., at a later birth. This myth is widely believed by stockmen and farmers despite the fact that it has been disproved several times by carefully planned scientific experiment. The classical case, accepted by Darwin, is that of Lord Morton's mare first bred to a zebra. The real explanation of this case has been cleared up by Cossar Ewart (1899) who showed that no such results take place, and that the striping reported on the legs of the second colt was a mere coincidence. Such striping is not infrequent.

Transmission of Acquired Characters. This expression is used to mean that characters acquired by an individual (see *Acquired characters*, for example) are transmitted to the offspring. This ancient belief is still held widely, despite the large amount of evidence to the contrary. Because it seems to offer an explanation of adaptations of animals in particular, there is a widespread inclination to accept this theory by those who are unfamiliar with the carefully planned experiments that have failed to confirm the theory. Since the French naturalist, Lamarck (1809), made this doctrine of the inheritance of acquired characters the basis of his theory of evolution the inheritance is generally spoken of as Lamarckism.

Triploid. Three homologous chromosomes in the same group as contrasted

with the diploid condition. A triploid individual, or triplont, is an individual with three of each kind of chromosome (except sometimes with respect to the sex-chromosomes).

Uni-sexual. A term applied to those species that contain only one kind of sexual individual; generally these are hermaphroditic.

T. H. M.

GIRDLE OF CHASTITY. The Girdle of Chastity is a mechanical device for ensuring female chastity and continence in cases where, from jealousy or from other reasons, this is desired. In its simplest form it consists of a jointed and padded hip band to part of which is attached another portion, also provided with joints, and which is composed of one or two plates of metal. This second part passes between the legs of the wearer and is secured to the band passing round the hips by some device which locks it in position. The plates are furnished with openings, often with serrated edges, which, although permitting the natural functions, are not large enough to allow the ingress of a finger. In some of the models one plate only is provided which effectually prevents normal coitus, but in certain other types there is also a posterior plate intended to preclude intercourse *in ano*.

The date of the introduction of the girdle of chastity into Europe is still obscure. The origin of the idea may well be sought in the custom of infibulating females with metal rings, a practice which is known in the East and for details of which see the article on INFIBULATION, FEMALE. Travellers returning from the East to Europe may have become acquainted with these methods for ensuring continence in women; and the chastity belt may well have seemed a better method for obtaining the desired end than by an operation whereby the vulva was mutilated or the labia sewn up.

Although examples of girdles from the earlier periods do not seem to have survived, it would appear that they were known as early as the second half of the twelfth century. In the Guigemar Epic of Marie de France, who flourished towards 1180, an incident is

recorded which strongly suggests an acquaintance with these devices. It is told how one day Guigemar is taking leave of his fair lady and how she begs for his shirt as a pledge of fidelity. She then ties a knot in it and arranges it in such a way that a stranger could only undo it by cutting or tearing the material. For his part Guigemar procures a knotted girdle which he secures around the naked body of his lover, and she swears only to love him who is able to open it without force.

This poem (see Marie de France, *Poésies*, Paris, 1819–20, Guigemar, 569) certainly suggests a chastity belt of some kind; and another poem by Guillaume de Machaut in the fourteenth century may perhaps be similarly construed. The verses (see *Le Livre du Voir-Dit*, Paris, 1875, pp. 161–62) consist of the correspondence which passed between the writer and a lady, who, in the course of the story, hands him over a little golden key, which she says is the key to her treasure.

Many commentators deny this interpretation, preferring to think that what is intended is the pledge of her honor, but there is no reason to shirk the more simple interpretation which is in general accordance with common sense. That the girdle of chastity was known as early as 1405 is seen by the fact that such a one is figured in the Göttingen MS. of Kyser of Eichstadt's *Bellifortis*, a kind of military encyclopaedia, which contains a good number of illustrations. The drawing (Fig. 1) shows a complicated piece of apparatus, the accompanying legend stating that it was used for the women of Florence and was made of iron and fitted with a lock.

Although precise information is lacking as to the date of the introduction of the girdle of chastity into Europe, legend has not been idle in spreading a story which has had a wide circulation and which rests upon a very insecure foundation. This is what has been termed the Carrara Legend.

Francesco Carrara, the Francesco II of the family of that name, was the well known tyrant of Padua, and when he was captured by the Venetians he was put to death (1406). His name was

long held in execration in Venice; and the stories of his cruelties were circulated in and around Venice for many decades. They were illustrated by a collection of objects of torture which

East and whence it was later borrowed by other countries.

Whatever story tradition may have handed posterity as to the introduction of the chastity belt into Italy the tale of how it was brought into France is clear. In his *Les Vies des Dames galantes*, Brantôme gives an account of what occurred at the fair at St. Germain, when one day a dealer brought a dozen belts for sale. It was said that five or six jealous husbands bought them and proceeded to fit them to their wives, but the locksmith was soon requisitioned to

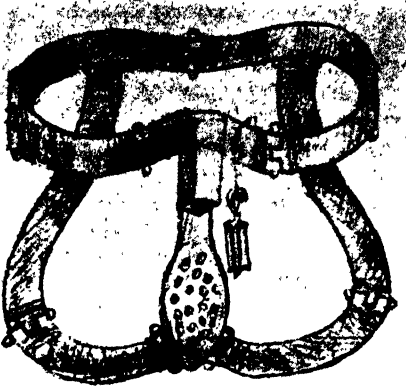


FIG. 1. GIRDLE OF CHASTITY: KYESER'S "BELLIFORTIS," 1405. (After Dingwall.)

rumor had it were used by the monster upon his victims. Among them was a girdle of chastity (Fig. 2) which tradition asserted had been applied by him to certain of his mistresses and with which, as Misson has it "that beastly Monster lock'd up his whores."¹

Although the girdle has been associated with the name of Carrara for centuries there is no evidence at present produced which proves him to have been its owner; and it may be that the belt was acquired at the same time as the other instruments of torture and thus became associated with them. At any rate the history of the objects is obscure, and Berchet, in discussing the matter, has not succeeded in throwing much light upon them.² Even, however, if Carrara were not the inventor, it would seem not unreasonable to suppose that Italy was the country into which the device was first introduced from the

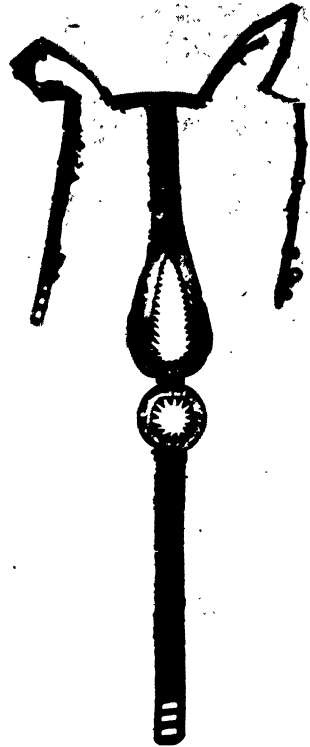


FIG. 2. GIRDLE OF CHASTITY: PALAZZO DUCALE, VENICE. (After Dingwall.)

make false keys and it was said that finally the dealer was threatened by some gentlemen of the court, the remainder of the belts being thrown away.³

¹ We quote from the English translation. F. M. Misson, *A new Voyage to Italy*, London, 1695, i, p. 169.

² F. Berchet, *Atti d. R. Ist. Ven. d. Sci., Lett., & Arti*, 1899-1900, lix, pt. 2; E. J. Dingwall, *The Girdle of Chastity*, 1931, pp. 35 seq.

³ *Oeuvres complètes*, Paris, 1864-82, ix, 133-34.

In the latter part of the seventeenth century we find Jean Buvat mentioning a girdle of chastity in his *Journal de la Régence*. This device was said to have been forced upon Charlotte Aglaé d'Orléans who married the Prince of Modena. Although the details of the girdle are omitted in the printed edition of the *Journal* the original MS. in the Bibliothèque Nationale provides us with what is required. Here we learn that it was a belt of velvet which surrounded both the loins and thighs of the wearer and which apparently contained a metal plate, which was tightly pressed against the vulva, so that the latter was completely enclosed, a small hole in the plate being left for the purpose of urination. From what Buvat says in an earlier part of the same passage it is clear that these devices were not unknown to him and were often used in Italian society.

In Germany also the chastity belt seems to have been known in the sixteenth century for Fischart, in his edition of *Gargantua*, has a passage in which he speaks of the wiles and the cunning of females against which steel plates and padlocks are of no avail.⁴

In Austria also it appears that the girdle was not unknown, as in 1889 a skeleton was discovered in a church yard of a little church in Upper Austria where the bones were still encircled by such a belt. Fortunately the find was made when E. M. Pachinger, the antiquary, was present and he was able to obtain the girdle and restore a portion of it. According to his account, excavations were being made with a view to the restoration of parts of the church when an ancient leaden coffin was unearthed on which there were no inscriptions of any kind. All the joints were perfect and it appeared certain that the coffin had not been touched since burial. It was opened and when the inner shell had been removed the skeleton was revealed. It was that of a young woman with a richly braided coiffure of reddish hair and was clothed

in a brown damask dress which appeared to date from some time after the commencement of the seventeenth century. The arms were encased in long gloves and the undergarments suggested that the woman had belonged to the upper classes. Around the pelvic region was a kind of iron hoop, jointed in a number of places and fitted with both an anterior and posterior plate, the latter being riveted to the hip band and the former being secured by locks. It would appear that the girdle was one which had been used in life, and, having been partially restored under Pachinger's direction it was added to his collection.⁵

During the course of years a number of other girdles have come to light, but the most famous are doubtless those in the Musée de Cluny in Paris, which are good examples of the two types already discussed, that is to say the kind fitted with one frontal plate for protection of the vulva only, and the second type where the anus also is controlled. These and a number of other models from various parts of Europe are fully dealt with by Dingwall (*Op. cit.*, pp. 71 *seq.*). Since publication, however, further information has been received and other girdles have been reported.

Thus in the Farnham Museum (Blandford, Dorset, England) there is a steel chastity belt with engraved designs on both frontal and posterior plate. These designs are of open work cut out of the metal, and the hip band is furnished with two alternative clasps for securing it round the body. As in many other specimens holes are drilled all round the edges of both plates where formerly a lining of velvet or of some other soft material was sewn. The orifice in the frontal plate has the usual serrated edges, whilst that in the hinder plate is of trefoil design. The history of this belt is, unfortunately, not known, as is also the case with a girdle of ex-

⁵ For full details see Dingwall, *Op. cit.*, pp. 84 *seq.* and cf. *Proc. of the Second Int. Congress for Sex Research*, 1930, Edinburgh, 1931, p. 589.

⁴ The Strasburg edition, 1590, p. 47.

ceptional interest which was originally in the Aston Hall Collection in Birmingham, England, and is now in the Art Gallery and Museum of the same city.

It is of iron and possibly dates from the middle of the eighteenth century. The hip band is composed of six pieces with a slotted adjusting device for varying the size. It would seem that there may have been formerly a band for use vertically, but if so it has been lost. The form of the frontal plate is very curious and the methods of adjustment by means of a turn screw has not been reported apparently in any other specimen. This anterior plate is hinged to a bar affixed to the band and is of such a shape that some artificial modification by a later hand seems very probable. Even so the plate would be much broader than in the majority of other existing specimens. The opening is of such a size that its purpose does not seem to be met; and on one side of the plate a hole has been roughly cut out for a reason which is very obscure. Both the plate and parts of the frontal band have been drilled for the usual lining, but there is no drilling in other parts of the hip band nor are there now any teeth or signs of serrated edges around the opening in the anterior plate.⁶

Although little information has been published on the use of girdles of chastity outside Europe material has been obtained which shows that these devices are not unknown elsewhere.⁷ It appears that in former times the Pennsylvania pioneer women, and to a lesser extent Indian girls, were forced to wear devices which were true chastity belts. W.

⁶ Although the type is very curious and shows possible modifications it may certainly be a genuine example of the one plate type falling into Dingwall's classification of Type II (see *Op. cit.*, p. 161).

⁷ In H. W. Shoemaker's paper on old time words, still or recently in use among the Pennsylvania Mountain people (*Publs. of the Penn. Folk-Lore Soc.*, Altoona, 1930, xii) occurs mention of a term "eye-holder" as applied to a chastity belt. In a correspondence with Shoemaker, the writer was supplied with some information on this matter for which he is deeply indebted.

L. Stephen, of Reading, Pennsylvania, provided Shoemaker with information on the subject, in which he states that these belts were made of heavy leather studded with rivets. A strap passed between the legs and joined at the back other straps which were passed round the body. At the point of juncture was a padlock fitted with a complicated mechanism and sometimes of very stout construction. There were, Dr. Stephens states, two names by which these belts were known. One was the Dutch word, or rather made-up word, *Eiholder*; and the other was *Futsa-shdupper*. The first term was used in the sense of "restrainer," and may be a corruption of the Dutch "*een houder*" (restrainer) or may be a slang expression meaning the "eye-holder," where "eye" is used for vulva as in the English slang expression "eye-opener" for penis.

The literal meaning of the second expression, *Futsa-shdupper*, was, according to Stephens, "private organ shield" and was purely descriptive. In the mountains of Central Pennsylvania many of the pioneers were Ulster Scots, and the term originally used by the Dutch soon became "eye-holder." Mothers used to fit their daughters with the contraptions when the girls went for picnics or other excursions where young men were present; and it is said that these girdles, or "Day Belts," as they were called, were still in use until recently. The Indians also adopted them for their daughters, and the saying, "I'll clap a belt on her" is still heard when some troublesome girl is too fond of the company of boys and young men.

The idea of such restraints would seem to be sufficiently simple to have occurred to many people where the physical virginity of the girls was highly prized and where these were often in danger of seduction by young men in the rougher places of the earth. A case was recently sent to Dingwall by a young man from New Zealand in which letter he reported that some of the girls living near the Public Works Camps on the West Coast of New Zealand were

fitted with such devices, and on one occasion a friend of his on attempting to court a young girl, found upon removing her clothes that she was wearing a metal plate attached to a hip band and firmly pressed against her genitals.

Apart from cases when girls are forced to wear such devices as hindrances to masturbation, a practice which is often described in current literature and which is fully recognized, there are instances reported in which jealous husbands of to-day are forcing their wives to submit to such restraints.

Before discussing these it may be of interest to mention two cases, one of which was dealt with fully by Dingwall (*Op. cit.*, Ch. iv,) and the other which appeared in the *Annales de légale, de crim. & de police scient.*, July

The former case is the instance of the Edinburgh doctor, John Moodie, who, in 1848, published his *Medical Treatise*, the second part of which is devoted to an account of the need for and the method of making girdles of chastity for Scottish girls, who, according to the author, were passionately addicted both to manual masturbation and the use of the godemiché. In Moodie's model the frontal pad was formed of a kind of grating fitted on to a pad which was pressed against the vulva, the top of the pad resting on the mons veneris and the lower point on the perineum. The apparatus was fastened to the body by means of belts attached to tight-fitting drawers and the whole was secured by a padlock with a secret flap over the key hole. This device, according to Moodie was not only a remedy against masturbation but also, as a means of avoiding seduction, it had a "high and essential importance."

It was as a preventive measure against masturbation that the second case was exhibited. Miss B. was brought to a hospital in Paris and was accused of habitual self-abuse. It was found that she was wearing a girdle of chastity that had been bought in a Parisian shop. It was of the single plate type,

padded, and fitted with a slotted hip band. Examination of the girl revealed a vulvo-vaginitis of venereal origin, and a torn hymen but no clear evidence of masturbation.

We can now pass to cases in which wives have been forced to wear such belts by their husbands or lovers and where the result has been that the case has become known through the operations of the law.⁸

One of the earliest cases where the wearing of a girdle of chastity ended in the courts was that mentioned by O. Worm in the middle of the seventeenth century (see *Museum Wormianum*, Lugd. Bat., 1655, pp. 388-389). In this instance the girdle consisted of a broad band of rough material provided with a slit which could only be opened with a key which the husband kept to himself. The plaintiff succeeded in her action and the husband was dismissed with ignominy by the judge who ordered him to hand over the key to his wife in order that she could liberate herself immediately.

Another supposed legal trial, which has for many years excited much interest, is known to us from the *plaidoyer* of the lawyer, Freydier, which document was published in Montpellier (1750). This advocate, who acted as the prosecutor in the case, has not been satisfactorily identified, and failure to do so has led certain authorities to cast doubt on the validity of the documents and to suggest that the whole affair was in the nature of a literary joke.

The evidence has been carefully reviewed at length by Dingwall in his study of the girdle of chastity already mentioned. He has pointed out how a person of the name of Antoine Freidier was, about at that time, Juge des Conventions royaux de Nîmes, and that he was later appointed to the Presidial Court. This is of some relevance since in a later edition of the *plaidoyer* which was issued in Nîmes (1779) the author is described as "M.

⁸ In France it is probably not illegal for a woman to be persuaded to wear a girdle of chastity unless injury results. See the law of 19 avril, 1890. In other countries also the question of cruelty is first of all considered, as there are women who do not object to such hindrances and bear them without complaint for lengthy periods.

F. * * *, avocat au Présidial de Nismes." Had Freyrier been a fictitious personage, as is sometimes urged, it is unlikely that a later edition of his *plaidoyer* would have been published with the statement that its author was "avocat au Présidial." Moreover the literary authorities of the time do not seem to have regarded the book as a work of fiction.

According to the story, a certain Pierre Berhle became enamoured of one Marie Lajon, but for one reason or another refused to marry her, although they were already lovers. During the course of their attachment Berhle persuaded Mlle. Lajon to put on a girdle of chastity which he had obtained, and which consisted of a kind of metallic corselet secured around the loins and fastened in front by a padlock. In front of the vulva a small opening was left surrounded by sharp points and in different parts of the device were sealed seams which Berhle impressed with a secret stamp.

In due course his lover gave birth to a child, and when she had recovered Berhle again refused to marry her and again insisted on the girdle being worn. Tired at last of this treatment the girl sought relief in the courts and the "Plaidoyer" is the account by her lawyer of her sufferings and her appeal against Berhle.

Passing over a number of minor cases which have been recorded we may consider briefly here the Hufferter Affair, which excited great interest in Paris (1892). A workman, employed in a jam factory, was accused of violating a young girl who was working at the same factory. Moreover the relationship was kept up for some time and Hufferter's affection for the girl was such that the pangs of jealousy began to afflict him. In order to allay them he persuaded her to wear a chastity belt, but the girl, Anna B., at last became tired of the whole affair and complained, whereupon the entire story was revealed. Hufferter was arrested and finally was condemned to two years imprisonment.

Almost ten years after the Hufferter scandal, another somewhat similar incident became known in Rome where the parties were of much higher social scale. In this case a sculptor had made a girdle with his own hands and forced his wife to wear it. Her friends gradually became aware of her condition; and the affair was finally dragged into the

courts, where the man confessed what had happened and it was stated that he himself took the girdle off twice a day for his wife's convenience, since the device that he had constructed had no suitable provision for the calls of Nature.

In 1910 the Affaire Parat convulsed Paris. An apothecary, whose shop was on the Rue de Vaugirard, was accused of cruelty to his wife. When the police visited his house they found Mme. Parat chained to the bed-post and wearing under her clothes an elaborate belted affair made of chain mail and securely padlocked. Parat was arrested, tried and sent to prison. There was nothing strange in a druggist knowing of the existence of such things. They are still to be found in Parisian stores and extracts from trade catalogues will be found reprinted in the work of Dingwall already cited.

In September 1932 another case was reported from Paris. Henri Littière, employed at the French Mint, was arrested on a complaint from his wife on the ground of cruelty. It seems that Littière had visited the Musée de Cluny one day and had seen the girdles of chastity on exhibition there. Being of a jealous disposition he thought the idea so good that he had a similar device made by a surgical instrument firm and compelled his wife to wear it. Not only did he make her submit to wearing the belt but he also chastised her and locked her up at home whence she finally escaped. Littière was sentenced to three months imprisonment, which on appeal was reduced to one week.

Trouble, however, soon broke out again. In 1934 he was again haled before the courts, if we can judge from the contemporary press. His wife was again wearing the girdle, and for the defence it was urged that not only did she wear it willingly but told her husband to be careful not to lose the key, adding moreover in court that it was true that her husband might be a bit crazy but that she herself was scarcely

able to look at a man without running after him.⁹

Whilst Henri Littière was deciding in Paris to refit his wife with a girdle of chastity it is reported¹⁰ that an anti-Semitic Hungarian Society, the League of Awakened Magyars or, as some call it the League of Awakening Magyars, issued a National Programme of which one point demanded the introduction of girdles of chastity to be fitted to all unmarried girls at the age of 12. The key to the belt was to be kept by the father or some other competent authority until the marriage contract was signed when it was to be handed over to the husband. The proposal does not appear to have been adopted.

Passing from Europe to the United States we may mention one case which excited a certain interest in New York (1931). It appeared that a certain John Bartz, excited by dreams and inflamed by jealousy, persuaded his wife to wear a girdle of chastity. The couple, who were living in Batavia, N. Y. had a large family, and it was said that for twenty years Mrs. Bartz had been compelled to wear the belt, which was made of reinforced leather and steel secured by padlocks. She complained of ill treatment also and finally left her husband taking refuge in the house of her parents in Attica. Bartz was arrested and held in the Genesee County jail on a charge of assault in the second degree.

From the above selected instances it is clear that the girdle of chastity is not merely an erotic mystification, as has been supposed by some unacquainted with the facts, but a device which has been used for many centuries and is still in use to-day. It is natural

therefore that it should be found in literature when the lusts of women and the difficulty of curbing them are held up to laughter. As is said in the *Musarum Deliciae* of Mennis and James (London, 1655):

"For women are like angry Mastives chain'd,
They bite at all, when they are all restrain'd.
We may set locks and guards to watch their fires,
But have no means to quench their hot desires.

Man may as well, by cunning, go about,
To stop the Sun in motion, as by doubt,
To keep a nettled woman, if that she
Strongly disposed be to Venery."

Or again the uselessness of restraint is seen in the lines:

"Lock her from Man and Beast, and all content,
She'll make thee Cuckold with an instrument."

This scepticism as to the possibility of curbing the sexual appetite of women when aroused is found in much of the anti-feminist literature; and the attempts of men to effect it is often a theme where the appearance of the girdle of chastity is to be expected. In Chapter V. of Dingwall's work on the chastity belt will be found a general survey of this question, so here only a brief summary will be given of some of the most important sources.

One of the earliest tales in which it is mentioned is that by Girolamo Morlini who lived in the first quarter of the sixteenth century. In his *Novellae* (Ed. 3, Lut. Parisiorum, 1855, p. 65 *seq.*) he tells the story of the married woman who fell in love with a young man and did all in her power to seduce him. Finally she succeeded and their night of love is described in vivid terms by the romancer as is also the incident where the outraged husband makes his appearance. He speedily took steps to prevent further intimacies and promptly fitted his wife with a girdle of chastity remarking that now he could go about in safety.

Another tale narrates how an innocent nun seduced a Milanese noble, who, being absent minded, appeared

⁹ See the contemporary Press, Sept. 1932, and for a photograph of the girdle and the

see the contemporary Press, Sept. 1932, and Heft 10, which reproduces a photograph from the *New York Times*. For the second trial see *Time*, Chicago, Jan. 29, 1934, p. 19 and *Time and Tide*, London, April 7, 1934, p. 433.

¹⁰ *Time*, Chicago, Dec. 4, 1933 & Jan. 29, 1934.

next day in a monk's habit having donned the garments of the nun's previous lover by mistake! This incident

only one of them is greeted with any enthusiasm. She says:

"Now welcome to me aboif thame aw.
Was nevir wyf sa straitly rokkit
Se ye not how my e— is lokkit."

Her lover is disgusted and says:

"Thinkis he nocht schame, that brybor blunt,
To put ane lok vpon your e—?"

Bessy does not know what to do, but she gets her lover to steal the key from beneath the head of her husband. They go off, Bessy remarking, "Na than lat ws ga play our fill."

The old man soon awakes, finds Bessy and the key gone, and a scene ensues in which the key is adroitly slipped back where Bessy has put it. The old man is pleased and remarks,

"I trow thair be no man in Fyffe,
That evir had sa gude ane wyfe."
Bannatyne MS., III,
94-9.

In the seventeenth century in France the girdle was occasionally mentioned in story and play, as for example in the comedy *La Rome Ridicule* by M. A. de Gérard, and *L'Amour Sentinelle, ou le Cadenas forcé* by D. C. de Nanteuil. Similarly, in the *Satyra Sotadica* of Nicolas Chorier there is an account and



FIG. 3. BOOK-PLATE OF MELCHIOR SCHEDEL, c. 1570. (After Dingwall.)

made such an impression on other nobles that they hastily had metallic drawers made for their wives which effectually guarded both anterior and posterior avenues and which were fastened above the navel and closed by a lock and key (Fig. 3).

One of the most curious literary references in English is that to be found in the works of Sir David Lyndsay, who lived about 1500. It occurs in a work which is preserved in the Bannatyne Manuscript, a new edition of which is issued by the Scottish Text Society. An old man is introduced who is leading his wife in a dance. He says:

"Bessy, my hairt, I mon ly doun and sleip,
And in myne arme so quyetly thow creip;
Bessy, my hairt, first lat me lok thy e—
Syne lat me keip the key as I was wount."

He locks up his wife, puts the key under his head and falls asleep. Lovers then come up to ask for Bessy's favors, but



FIG. 4. THE JEALOUS HUSBAND PREPARES FOR A JOURNEY. (French, 17th Century.)

description of girdles of chastity; and the subject of the novel, *L'Amour en furcur*, of which many editions appeared from 1690, is a lady who was forced to wear such a belt and the adventures which befell her and her lovers (Fig. 4).

At the commencement of the eighteenth century appeared in Paris an amusing satire on the girdle and its results, entitled *Satyres sur les femmes bourgeoises qui se font madame*, which was probably written by d'Hennissart. In this case both husband and wife agreed to be mechanically restrained and the story of their duplicity makes

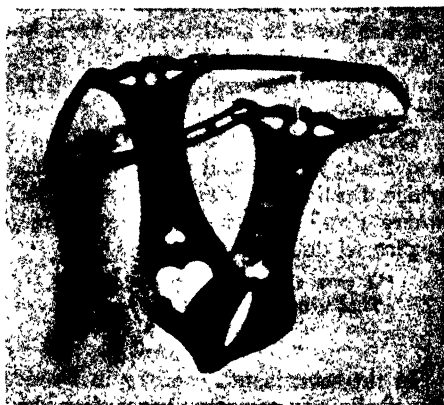


FIG. 5. GIRDLE OF CHASTITY: ERBACH COLLECTION, ERBACH, ODENWALD, GERMANY. (After Dingwall.)

amusing reading. German literature also is not without mention of such devices, and the subject of the "Italian Locks" as they were called is brought up when emphasis is required to be laid on the faithlessness of married women.

To sum up, then, we have seen that the girdle of chastity has been in use since perhaps the twelfth century and is still found in modern times. Two main types are to be distinguished which differ inasmuch as one has protection only in the front, whilst in others the frontal plate is somewhat extended backwards to protect the anus, or consists of two distinct portions (Fig. 5). Variations exist and differ both in the quality, material and design, but the aim in all is the same, namely to protect the female genitals and adjacent regions from interference except when that interference can be legitimately exercised.

The standard work on the girdle of chastity is Eric John Dingwall's *The Girdle of Chastity*

(London, 1931) which reviews the whole field with detailed references. Earlier sketches were *Le Cinture di castità* (Roma, 1881, and later editions) by E. M., which has been attributed to V. Busnelli; *La Ceinture de Chasteté* (Paris, 1904) by Dr. Caufeynon, the pseudonym of J. Fauconney; and *Der Keuschheitsgürtel* by F. Grapow (in *Geschlecht und Gesellschaft* 1911, vi, 289-307). Other references are indicated in the text or can be verified by consulting certain of the works mentioned above.

GONADS, the sperm-glands or sex-glands; the female gonad is the ovary, and the male gonad is the testicle. The gonadal activity accompanying puberty is known as *gonado-advent*, and the cessation of gonadal activity accompanying senility is known as *gonadopause*. The gonads produce the reproductive or sperm-cells: the ovum in the female, and the spermatozoön in the male. These sexual cells are known as *gametes* (from the Greek word, meaning spouse). Thus a gonad is the gamete-producing gland. The fertilized egg, or cell resulting from the fusion of two gametes, is known as the *zygote* (from the Greek joined).

HALL, G[RANVILLE] STANLEY (1844-1924), American psychologist and educationalist. His contributions to the subject of sex—its biology, its psychological phases, its ethnological place, its relation to religion and art, and to the stages of life in the individual, and most of all to education and culture and the future of the race—were so numerous and so widely distributed through his books and treatises and more casual papers in many periodicals and reports that to present them all in a form satisfying to the exact literary biographer would be a formidable task, although an important one. These contributions as a whole constitute a distinctly new and original development in this field, and they still remain in an unappraised relation to other lines of progress in the current psychology and biology of man. This work needs especially to be treated in comparison with the Freudian psychology, with which it is in part in harmony, but from which, both in fun-

damentals and in practical issues it is in some ways widely at variance.

To obtain a clear view of Hall's treatment of the problems of sex, one must observe several biographical facts. He originated in a typical New England century environment, where the race was susceptible to the growth of scientific interests. He graduated from a college in which philosophy, especially ethics, and religion and literature were the dominant themes; and later he graduated in theology. Not satisfied with these attainments, and already before the completion of his courses having some perception of his own proper sphere in science and philosophy, he turned to Germany for a broader, more liberal education. There for two prolonged periods he studied under the influence of great teachers of philosophy, biology, theology and psychology. Never a mere revolter, he retained throughout life his interest in the principles of his early training, but he showed an unusual aptitude for sympathetic utilization of various, even conflicting, systems of thought. His own philosophy was a continuous growth, without conscious systematization. It was in no sense a synthesis of other philosophies, but rather an individual prevision of scientific progress which became the basis of a series of intensive investigations of problems of psychology, in which there is evident the dominating force of a strong personality, and a continuous advancement along lines set by an early orientation in the evolutionary philosophy of life and the sciences of man. This remained his permanent adjustment and his absorbing interest.

Hall termed his own field *Biological Philosophy* to indicate his departure from the more restricted area of physiological psychology. He meant by this that the proper scope of the sciences of man was the whole of organic life, and the result a total conception of the meaning of life as a program for an indefinitely long future of conscious evolution.

The general principle of this biological philosophy in its aspect of history of nature is the principle of *recapitulation*. Hall's great work was the exploitation of that principle which states that *Phylogenesis is matched by Ontogenesis*. Each individual repeats, stage by stage, although in no single and unmodifiable order, the steps through which the race has progressed from the beginning. Each stage must be represented in the individual. The child

must realize, both in mind and in body, all that was contained in the stage of the race which, at any time, he is representing. Only by such realization can he be prepared for the next

momentum for reaching maturity. Enforced growth, the elision of steps, the inflicting upon the child of types of behavior inappropriate to the stage in which he is living are all bad. It is equally wrong, on the other hand, to overemphasize and unduly stimulate any stage, since thus the child's growth may be arrested, permanently, with respect to one function, or many, or totally. The child who is thus impeded, or whose growth is distorted or unduly accelerated will not become mature. He will lack momentum, and he will fail to be prepared to perform the essential task of the adolescent, which is to advance beyond the highest level yet reached by the race, and to live for a time creatively, mapping out new vistas for the race, producing new culture forms, having new experiences which in time will become embodied in the true inheritance of the succeeding generations.

At the time of adolescence, the biological forces within the individual accomplish a momentous change from devotion to a narrow, merely individual life to a broader, more altruistic racial life. Like other stages, this final stage, before maturity is reached, demands full recognition and consent. It represents at the beginning a time when the racial life was changing to a more mental life, in which there was a striving to reach a higher spiritual level; and when, for a time, there was conflict and even chaos. This was a period of the race before history, but the conflict was well recorded in memory in the form of myth, story and tradition. In the race and in the individual it is a stage of impulse and unorganized experience, marked by the danger of excess, abnormality and crime. For the adolescent it is a period of storm and stress, and moral conflict, when for a brief time the individual represents in potentiality

the man who is to be, and also all the capacity of the race for evil and degeneration. If the race continues to advance it will progress by the victory of the good over the bad at adolescence, by the fulfilment of the promise of adolescence.

In the process of conscious evolution of the race towards an ever more abundant and higher life, the interest of the individual is secondary to the interests of the race. The individual, however, is not required to sacrifice himself in this service of the race, since the altruistic life which he is to lead is a normal life, and the source of the greatest happiness. Service to the race is best performed by the individual when he develops all of the powers that are inherent in him. He must abandon many desires; he will see that much is personally unattainable; and he must work for other generations; but the very essence of the highest religious and moral life which will make this possible is the quality of *morale* which is the total of perfect mental and physical health.

In Hall's philosophy, the great problem of education, in its widest sense, is the preparation of the individual for the profound change at adolescence, from the state of childhood to the state of adulthood, and the safe conduct of the adolescent through the period of transition. Out of the recapitulatory principle he developed a consistent ethics and pedagogy. He did not develop any rigorous ethical system, which might show how the interests of the individual and of the race could be harmonized perfectly, and it was not his method to analyze mental processes with precision, but he devoted himself to exhibiting a general principle at work in most of the major occupations of the mind; and in the course of these studies, the development, the expression and the education of the sexual instinct received, as did other aspects of life—all the emotions, the moral and religious interests in general—a varied and many-

sided investigation in which he went far afield for his materials.

Hall's problem in the sphere of sex education was to show the meaning of the process of maturation of the sexual instinct and emotions; and to discern what may properly be entrusted solely to nature, and what must be directed consciously, by intervention, by purposive arrangement of environment. He did not accept as the whole problem the education of sex which should have as its aim merely the propagation of biologically sound organisms; he believed it to be equally important that the education of the sexual instinct should be conducted as a far-reaching psychological problem; that it was possible, through the control of sex, to ensure the growth of a higher civilization, an ever-widening cultural life, and that the sexual urge was the raw material from which this higher culture might be created.

The sexual function, in both its physical and its mental manifestations he believed to be superabundant, and without education a menace to the higher culture; and if permitted to develop too far, and to be made an end in itself, it readily, he thought, was turned to perversion, and could become a source of deterioration of the race. Sex requires no stimulation; rather, it must be held back, so that it may motivate other interests and be modified by these interests and assimilated into life as a whole. This must be done not only in order to maintain civilization at its present level but to develop new powers and experiences which will add to the inheritance of the race, since such acquired powers and even experiences are *de facto* in the literal sense inherited.

The recapitulatory law offers a general principle for the interpretation of the meaning of sex in the life of the individual and the race, and an outline for its education, but it does not establish precise standards or specific rules. It shows that sex education is far broader than the work of imparting information, and that even the important

function of guiding the individual to a mature heterosexual adjustment is not all that is required. It shows where, in a general way, the culture material for the broader sex education is to be found: that is, in the racial culture sources, especially the religious and ethical; but it does not say precisely what materials shall be used or what the proper order or manner of teaching is.

Hall urged always that the chief aim of education was to bring the individual to complete maturity; and that in this process the pedagogy of the sexual function was one of the most important and as yet least understood of the great educational problems. He emphasized, on biological grounds, that mainly the education of the two sexes should be conducted separately, since only in this way could that complete maturity be achieved, the required culture and the whole attitude in teaching being naturally different for the boy and the girl. The keynote of the education of the sexual function is restraint. Restraint is necessary in order to delay and to divert into broader channels the on-rushing tide of sexual impulse, and by this retardation to allow all the endowment of the race to be represented in the individual. The goal seen from the beginning is the union of the matured male and the female equally developed to the most complete adulthood. Maturity is not achieved through the heterosexual functioning itself, but the heterosexual function is an eventuation following complete maturation. The process of maturation in the broader sense as revealed by the law of recapitulation cannot be left to chance, or solely to nature, but it must be conducted from the beginning consciously, in accord with the general principle of physical and mental evolution, and with full recognition of the meaning of the stages fixed by nature, but also with clear vision of the ultimate goal and the resources that may be used for perfecting the final stage.

The education that has as its aim the complete maturation of the sexual in-

stinct, and its full employment in the advancement of the race properly begins in infancy, with attention to clothing, bathing, correction of local irritations, avoidance of excessive fondling, and of everything that produces intense spasms of feeling; and there must be constant watchfulness to prevent wrong habits. Direct teaching of the facts of sex should begin as early as eight or ten years, since sexuality flourishes long before puberty. This teaching should be simple and plain, carefully measured to suit the age, drawing most upon the facts of plant and animal life, and with studied attention to favorable situations. It should begin always in the home, and it should aim to circumvent the evil influences of companions who may associate sex, in the child's mind, with deceit, shame and vulgarity. Especially this teaching must prepare the child so that sex knowledge may not burst upon the mind crudely at the time of puberty when it may conflict with newly forming ideals. With the girl the instruction should center about child-bearing so that later, love shall never be separated from the thought of the maternal function. As puberty approaches, a foundation for the more difficult part of the training of the sexual impulses must be established by stimulating those interests which later are to become the means for the diversion of the sexual interests into other channels.

At puberty and afterwards, direct teaching is harder, and the education of sex requires the best pedagogical wisdom. Much depends, for later health and power, upon what happens then. Since most of what is best after puberty is secondary sexual in origin, the development of interests which arise from the sexual instinct is of the highest importance. Such interests as manners, dress, ornament, friendship, loyalty, honor, are to be regarded as controls of sexuality, since they are irradiations from it, impossible if the sexual instinct itself is perverted. Ideals of physical perfection, intellectual interests, industrial interests, music and other arts,

serve the purpose of thus irradiating sex, and taking it up into higher enthusiasms and tensions. Effort to control it by will alone is wasteful. Conversion, especially, is to be thought of as concerned most with the sexual life. Adolescence naturally embodies the transition represented by conversion, so universally occurring in the races of men as a change from the individual to the fully social life. Conversion, concerned with the development of the higher mental life in the race, has had as its chief function the control of sexuality. At puberty all the powers of religion and morality are needed to divert sex, for a time, away from its specific objectives. Strong motor interests, also, help to regulate the sexual passions, at this time. Such activities as walking, running, and hill-climbing are especially useful in preventing the over-excitation or perversion of sex so likely to occur in puberty. The teaching of eugenics has an important place in helping to elevate the sexual impulses and in arousing enthusiasm for the deeper problems of history and sociology.

The needs of the two sexes are so different because of fundamentally diverse biological aims, that it is doubtful whether boys and girls should be educated together after the age of twelve. Since the deepest instinct of women is to transmit life, the ideal education for the girl should make training for motherhood central. The woman is more generic by nature, less adapted for specialized activities, and also more conservative; and these differences impose definite tasks upon the educator. Perfect health for the girl is attainable only as she progresses according to her own nature, through the steps which constitute the great change from the selfish to the altruistic life. To violate this natural growth by forcing the girl to adapt herself to a curriculum and type of education devised for the boy is wrong.

The right way is to develop the differences rather than the similarities of the sexes. It is natural for the girl to

withdraw from the other sex as maturity approaches, and to be sentimental and romantic; and for the boy, it is natural that the girl should seem to be apart and ideal. As adolescence progresses there should be a subtle tension and restraint between the sexes, and at this time much familiarity is bad. Particularly vicious is a spirit of rivalry between the sexes at this age. Another evil is the introduction, in the boy's training, of too much feminine influence during the pubertal period, since true virility at that age is not adapted to taking a high polish. The relative segregation of the sexes in the process of education creates the situation most favorable for realizing full maturity for each sex, each according to its own especial nature. There are many pitfalls at best, and the greatest danger, always present, is that there may be arrest of growth before all the capacities have been exploited.

Sex is a plastic force, out of which many interests and achievements may be created. It stands at puberty at the parting of the ways, where it may be attached merely to the selfish pleasure life of the child or may be converted to the motivation of the interests of the altruistic life of the adult. The chief danger from the perversion and immaturity which are threatened is that sex will be detached from the interests that normally accompany it, both the social and the personal; and that as a consequence it will remain at a low level and be wholly unproductive.

The important lesson to teach the adolescent is that sex is primarily for the race, and not for the pleasure life; and also that many coveted prizes depend upon correct sexual habits; that the sexual organs have two functions: reproduction and to give force and energy to other parts and to character generally; that all work requiring great effort demands sexual temperance; and that there is a health of body and mind which those who are too much devoted to the sexual life can never know.

Sex has eventually its rightful domi-

nant place in life. Its normal expression is in the association of fully matured adults. Even there, however, the restraint is not relaxed. The ideal sex is thrifty, temperate and elevated. Having passed the danger point at which it may destroy the bloom and enthusiasm of youth, it is still to a certain extent in need of education and control. As merely sensuous, it never seems quite to lose its stigma of sin. To be normal it must be highly gratifying to both individuals, an expression of true mating and of perfect health and of noble purpose. Grossness and imperfection in it not only mar the individual but also deprive the offspring.

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G. E. P.

HERAISM, a term devised by Van de Velde from Hera, wife of Zeus, and defined by him as "a phenomenon which aims at increasing the power of the woman, with the viewpoint that the lady is a being on a higher plane and should be served and honored as such by the man."

T. H. Van de Velde, *Die Abneigung in der Ehe* (Sex Hostility in Marriage, 1928, ch. xiv).

HERMA. A stone pillar image, commonly square, surmounted by a head of Hermes, the face usually bearded. There were pillars such as these in several public places at Athens; they also stood in front of private houses. They had a phallic significance. In pre-classical times, a phallic herma was employed to represent Bacchus.

HIRSCHFELD, MAGNUS [Autobiographical Sketch], German sexologist. Magnus Hirschfeld was born May 14, 1868, in Kolberg, the port of the Prussian province of Pomerania on the Baltic Sea. His father was Sanitary Councillor Doctor Hermann Hirschfeld; distinguished as a philanthropist, he

was responsible for many hygienic and social measures. After his death (1885), the citizens of Kolberg erected in his honor a public monument in recognition of his outstanding work. For nearly fifty years this monument graced the city; the Hitler régime removed it from sight because the man whose name was thus commemorated was a Jew.

Magnus Hirschfeld's two elder brothers also were physicians; one died in Chicago (U.S.A.); the other in Davos (Switzerland). One of his sisters was the well-known writer, Franzisca Mann. At the age of 15, Hirschfeld published his first literary work, "The Dream of a Universal Language"; this appeared in *Der Zeitgeist*, a Berlin weekly whose editor had no idea that the author of this, and another etymologico-scientific essay which soon followed ("Our Given Names"), was still a schoolboy.

Hirschfeld at first devoted himself to the study of languages and philosophy; he studied in Breslau, later going to Strasbourg, then to Munich where he registered for a medical course; he graduated under Virchow with a dissertation on "Affections of the Nerves following an Attack of Influenza." After passing his state examination in Würzburg, and his discharge from military service, he visited the World Exposition in Chicago (1893), having been sent there as a reporter for various periodicals and newspapers. (America of course looked changed to him when he came again 40 years later; automobiles, cinemas, radio, telephone, skyscrapers and prohibition had given to the country an altogether different complexion.)

Leaving New York, Hirschfeld traveled to North Africa (Morocco and Algiers), returning to Germany (1894) by way of Spain and Italy. He settled in Magdeburg as a general practitioner; two years later he removed to Charlottenburg. He delivered many lectures on hygienic problems and founded, for workers' families, an Insurance Institution (*Hausartzkasse*), replicas of which soon sprang up in many other cities, becoming communized later.

Hirschfeld's first contribution to sexology, *Sappho and Socrates* (1896), appeared under a pseudonym. It was the result of the suicide of one of his patients, a young officer who shot himself on the eve of his marriage, bequeathing Dr. Hirschfeld many of his notes and drawings. This work appeared synchronously with the trial of Oscar Wilde in London. Wilde's writings (es-

pecially his "Picture of Dorian Gray") were widely read in Germany at the time. In *Sappho and Socrates*, Hirschfeld defended the view that the sexual urge, normal and abnormal, is the result of a certain inborn goal-striving constitution, influenced by the glands of internal secretion. The brochure *Sappho and Socrates* was as a tiny stone setting the great avalanche rolling. Not only was it a solace to a large group of people whose number increased to thousands during the years, but it marked the beginning of various publications dealing with the problem of sexual intermediates (*inbetweens*) and allied topics.

In 1897, Hirschfeld organized the Scientific-Humanistic Committee which presented to the Reichstag a petition for the repeal of Section 175 of the German Criminal Code. The now celebrated appeal circulated for 10 years. With the collaboration of Hermann Rohleder (Leipzig), and Friedrich S. Krauss (Vienna), Hirschfeld issued the first *Zeitschrift für Sexualwissenschaft* (Journal of Sexual Science, 1908); with Iwan Bloch, Albert Eulenburg and Heinrich Körber he founded the Medical Society for Sexual Science (*Ärztliche Gesellschaft für Sexualwissenschaft*, 1913). In the meantime, Hirschfeld had settled in Berlin (1910) as the first specialist in psychosexual diseases (*Spezialarzt für seelische Sexualleiden*).

To facilitate, as much as possible, examinations of the individual sexual constitution, Hirschfeld (shortly after 1900) compiled a psychobiological questionnaire. This questionnaire contained 130 questions and was filled out by more than 10,000 men and women; it is a most important document for further research. On the basis of these questionnaires, Hirschfeld wrote his first sexo-biological book, *Naturgesetze der Liebe* (*Natural Laws of Love*), divided into three parts: Love's Impression, Love's Urge, Love's Expression). The work explains that as every attraction in nature, from chemical elements to cosmic bodies, rests upon law, so hu-

man attraction and repulsion, love and hate, are governed by natural laws, the scientific knowledge of which is of great importance to the individual and to the entire human family.

Other writings followed. Hirschfeld published 187 works in the space of thirty years, the following five being the most important: *Die Transvestiten* (Transvestitists, researches into the erotic disguise-urge, with exhaustive causuistics and historical material); *Die Homosexualität des Mannes und des Weibes* (Homosexuality in Man and Woman); *Sexualpathologie* (Sexual Pathology, textbook for physicians and students, 3 volumes); *Die Geschlechtskunde* (Sexual Knowledge, based on 30 years of research and experience, 5 volumes); *Die Weltreise eines Sexualforschers* (World Journey of a Sexual Research Worker).

Four special fields are covered in these works, making an entity of the subject of sexual science: (1) Sexual Biology: with sub-headings: sexual physiology, sexual psychology and sexual hygiene. (2) Sexual Pathology. (3) Sexual Sociology: relation between sexual and social questions. (4) Sexual Ethnology: dealing with the manifold sexual and love customs of nations, showing that up to the present time man has not generally been successful in finding a satisfactory answer to his sexo-biological needs and problems.

The foregoing arrangement served also as the basis for the organization and collections of the Institute of Sexual Science, founded after 25 years of preparation, by Hirschfeld in Berlin (1918). For the home of the Institute, Hirschfeld acquired the mansion of Prince Hatzfeld, German Ambassador to France. Architectonically it was one of the most beautiful buildings in Berlin. In 1919, it was taken over formally by the Prussian Government as the Magnus Hirschfeld Foundation. The Institute had various technical departments and teaching courses. It housed a special library of approximately 20,000 volumes, collections of more than 35,000 pictures gathered

from all parts of the earth. It was visited for the purpose of research and study by thousands of physicians and scientists from all over the world.

Two features of the Institute deserve special mention: the Marriage Consultation Department, the first of its kind in Germany (which was followed up to 1932 by 250 similar institutions in Germany and Austria), where men and women about to be married would undergo a physical and psychic examination to ascertain whether their prospective marital union was desirable for them and for their progeny. No compulsion, of course, was resorted to, but on the basis of the examinations a prognosis was made. Frequently, fitness for marriage was accomplished by prescribing a course of treatment. Of equal importance was the advice to those already married. Many discordant elements, such as frigidity in the woman and impotence in the man, could thus be eliminated. Birth control information was given in a conscientious, scientific manner in appropriate cases. When the marriage proved incompatible, the basic law—"not *who* is at fault, but *what* is at fault"—served as the mode of action.

The second feature, which filled a great need, was the Questionnaire Evenings, held weekly in the Ernst Haeckel Hall of the Institute. This hall bore the inscription: *Not for its own sake is Science, but for all Humanity*. These evenings afforded the public an opportunity to deposit, in a box, every week questions preferably without signatures; on a certain day these questions were answered by an Institute physician. On those evenings, when liberal and scientific explanations of all sexual problems were given, the attendance was enormous.

An important activity was Hirschfeld's service as expert in the courts; he testified in numerous sensational trials, from the sexopolitical trial of the Kaiser's friend, Prince Philipp Eulenburg, and Maximilian Harden, to the Lützow-Hagedorn-Krantz and Frenzel trials. His analyses of the accused often turned the verdict in their favor and he saved

many from the penitentiary and prison, and in several cases even from capital punishment.

The Sexual-Forensic Department of the Institute dealt not only with moral delinquencies, but also with robbery, assault, murder and homicide whenever they had any connection with sex life. Careful attention was also given to the alimentary processes. During recent years, blood-examination was added to the examination of the sperma. The Institute was frequently called upon for expert advice by the authorities.

Advice was given gratis in 90% of cases. Expenses were covered chiefly by the revenue of the Sexual Therapy Department, also by the sale of various preparations of the hormones, purveyed by the Institute for the treatment of disturbances of the internal secretions.

In addition to the *Zeitschrift für Sexualwissenschaft*, already mentioned, Hirschfeld published the *Jahrbücher für sexuelle Zwischenstufen* (Yearbooks of Sexual Intermediacy, 23 volumes); *Vierteljahrsberichte des wissenschaftlich-humanitären Komitees* (Quarterly Reports of the Scientific-Humanistic Committee); monographs from the Institute of Sexual Science; *Die Sittengeschichte des Weltkrieges* (History of Morals of the World War); also, with Maria Kriech, a monthly periodical, *Die Aufklärung* (Enlightenment). His writings in collaboration with other authors on this subject are numerous.

Hirschfeld's literary activity covered other fields. His *Die Gurgel vom Berlin* (Berlin's Gullet) and *Alkohol und Geschlechtsleben* (Alcohol and the Sex Life) discuss the alcohol question; *Warum hassen uns die Völker* (Why are we hated by the nations) deals with the psychology of the War; *Wir brauchen ein Gesundheitsministerium* (We need a Health Ministry) attracted considerable attention. With his sister, Frau Franziska Mann, he wrote a brochure on Woman Suffrage. His latest work was entitled *Racismus, ein Phantom als Weltgefahr* (Racism, a Phantom as a World Danger). The bibliography of his most important works contains about

200 titles. Lectures and courses given by Hirschfeld, both at home and abroad, either of a technical character delivered before professional circles, or of general interest before public audiences, may be counted in the thousands.

Hirschfeld called the first International Congress for Sexual Reform (Berlin, Virchow-Langenbeck Haus, 1921); the Second Congress took place in Copenhagen (1928); the Third in London (1929); the Fourth in Vienna (1930), and the Fifth in Brünn (1932). These highly important Congresses were organized by the Welt-Liga für Sexual Reform (WLSR) founded by Hirschfeld together with the Swiss August Forel and the English Havelock Ellis.

During the War, Hirschfeld devoted himself to the care of prisoners, especially exchange prisoners, in Switzerland and Holland. After the War, when the Nazi movement gripped Munich and spread in ever larger circles throughout Germany, Hirschfeld's name was placed on the proscription list. After delivering a popular scientific lecture in Munich, he was brutally attacked in the streets. Unconscious, he was taken to the Surgical Clinic, where his injury was diagnosed as a fracture of the skull. As the press carried a notice that the attack had proven fatal, Hirschfeld had an opportunity of reading his own obituary.

The Nazis persecuted Hirschfeld, not only on account of his "non-Aryan" extraction, but also because of his open acknowledgment of pacifistic and socialistic tendencies, and his work in sexual science. Because of their libels, Hirschfeld finally was obliged to bring suit for defamation of character against the editor of the *Stürmer* in Nürnberg. The latter, however, by means of repeated postponements prevented the case from coming to trial. Although the Nazis themselves derived great profit from Hirschfeld's theories (and called on him personally for help) they continued his persecution relentlessly; they terrorized his meetings and closed his lecture halls, so that for the safety of his audiences and himself, Hirschfeld

was no longer able to make a public appearance.

Those were the conditions in Germany when Hirschfeld (November 1931) received an invitation from the German-American Medical Society in New York and from other scientific organizations in the United States to deliver a series of lectures and courses in his special field. A fortnight later, when Hirschfeld left his fatherland, he did not suspect he would never again see his Institute. During his American tour, Hirschfeld was invited to Japan to outline, before a medical congress, the present general picture of sexual pathology. Having delivered many lectures in the United States, from New York to San Francisco, he sailed over the Pacific. From Japan he traveled to China, where he had been previously invited and spoke in Peking, Nanking, Shanghai, Hongkong and Canton. Finally, the lecture tour carried him to Java. He delivered lectures in Ceylon and in India where (1932) he suffered a serious attack of malaria. The following winter was spent in Egypt, where Hirschfeld held a teaching-course in sexual science in the University of Cairo. This research and teaching journey around the world ended in Palestine where Hirschfeld had been invited by the Hebrew University in Jerusalem. From Palestine he returned to Europe via Damascus and Beyruth. During this world-journey Hirschfeld collected much sexual-ethnological material which he shipped to his Institute in Berlin. (The greater part of this valuable collection was burned by the Nazis, when they demolished his Institute).

In Greece, after several years of absence, Magnus Hirschfeld again stepped on European soil; now he heard tales and warnings from Germany which made it clear that his life was in danger if he returned to his homeland. Hirschfeld then went to Vienna, later to Switzerland to work on his book of travels. It was in Switzerland that the news reached him that one hundred of the "Nazi Committee against the Un-German Spirit" had broken into his Institute (May 6, 1933), destroying the greater part of his collection and scientific material and removing more than 12,000 volumes from the library, which (on May 10), together with a bust of Hirschfeld they publicly burned.

Thereupon the Institute was officially closed. Now it houses: the National-Socialistic Juristic Union; the Nibelungen Verlag; Anti-Communist Society; Institute for Research in Freemasonry;

Institute for Research in Judaism. Hirschfeld's personal property was confiscated for the benefit of the Prussian government, on the ground that he was "antagonistic to the spirit of the State."

A few days after the destruction of his Institute, Hirschfeld was in Paris; visiting a cinema, he saw with his own eyes, on the screen before him, the burning of his library. In France, where he now lives, he was hospitably received as a scientist. With French aid he established a smaller *Institut des sciences sexologique pour la recherche scientifique des instincts normaux et anormaux et de la constitution psychobiologique*, the foundation of which was composed of the remnants—documents, questionnaires, objects—rescued from the original Institute of Sexual Science, formerly of Berlin.

M. H.

[Shortly after this autobiographical sketch was written for *ENCYCLOPAEDIA SEXUALIS*, Magnus Hirschfeld died at Nice, May 14, 1935, on his sixty-seventh birthday.]

HOMOGENIC. Edward Carpenter's term, proposed as a substitute for the term homosexual.

HOMOSEXUALITY.

- I. SPONTANEOUS ERUPTION OF HOMOSEXUAL FEELING.
- II. THE DIFFERENCE ALREADY PRESENT IN THE CHILD.
- III. CHILD'S ASEXUAL SUBCONSCIOUS URGE TOWARDS THE FUTURE SEXUAL OBJECT.
- IV. NON-APPEARANCE OF DESIRE FOR THE OPPOSITE SEX.
- V. CONTENT OF SEX DREAMS.
- VI. HARMONY BETWEEN SEXUAL PERSONALITY AND SEX URGE.
- VII. PHYSICAL SIGNS OF RECOGNITION IN THE HOMOSEXUAL.
- VIII. INEFFECTIVENESS OF EXTRANEOUS INFLUENCES ON HOMOSEXUALITY.
- IX. PARALLELISM IN HOMOSEXUAL AND HETEROSEXUAL PHENOMENA.
- X. FAMILIAL APPEARANCE OF HOMOSEXUALITY.
 - A. SUBJECTS FOR EXAMINATION
 - B. PARENTS
 - C. FATHER'S BROTHERS AND SISTERS
 - D. MOTHER'S BROTHERS AND SISTERS

E. FATHER'S PARENTS

F. MOTHER'S PARENTS

XI. EQUAL DIFFUSION OF HOMOSEXUALITY.

XII. FURTHER PROOF OF THE INNATENESS OF HOMOSEXUALITY "PER EXCLUSIONEM."

Far more extensively than any other field of sexual science, homosexuality has been the subject of wide investigation and discussion. The bibliography for a decade (1898-1908) numbers over 1000 works in the German language alone. It was during this period that the hybrid, and therefore not so fortunate term, composed of Greek and Latin was invented: *suos*, or more correctly *suoios* (same), and *sexus* (sex) = homosexuality, came into use. This expression has become so deeply rooted in literature that every effort to discard and replace it with a more purposeful (and etymologically more correct) name, promises but little success.

The word homosexual is first to be found in 1869 in a brochure of the Hungarian physician Benkert (born 1820) who signed himself "Kertbeny." The writer of this pamphlet—which during the following 30 years was forgotten and out of print, and which I republished in 1905—describes in the following highly lucid manner the meaning of the expression *homosexual*:

"In addition to the normal sexual urge in man and woman, Nature in her sovereign mood has endowed at birth certain male and female individuals with the homosexual urge, thus placing them in a sexual bondage which renders them physically and psychically incapable—even with the best intention—of normal erection. This urge creates in advance a direct horror of the opposite sexual, and the victim of this passion finds it impossible to suppress the feeling which individuals of his own sex exercise upon him."

This explanation contains the essentials of the phenomenon. Benkert emphasizes that the homosexual urge is inborn and that it creates a certain sexual bondage from which the individual is unable to free himself. He finally

stresses the fact that the inclination toward the same sex is bound up with a distaste, a horror, for the "opposite sexual."

It would indeed be an error to overestimate the homosexual problem; but it would be just as wrong to underestimate it; for, as a matter of fact, the number of homosexuals is larger than was formerly believed and still is believed to-day (every large family circle faces the possibility of having a homosexual member in its midst). Further, considering the many prejudices and errors in the field of sexual science, there is hardly a second problem to which so many useful people have been uselessly sacrificed.

What is the basis of homosexuality? This inquiry is not only of theoretical worth, but like most sexual problems it is of highly practical importance. Is homosexuality inborn or acquired; does it rest upon a dispositional-constitutional or an environmental basis? To prominent jurists the decision of this preliminary question has been of great importance, as, whether or not homosexual activity was punishable, depended upon the answer. For, they reason, is there a deeply-underlying constitutional predisposition leading to homosexual activity, then the essential presumption of guilt is lacking.

Opinions may differ as to whether such proof is necessary to establish impunity or whether the many other objections advanced against prosecution are sufficient. As for instance the opinion of Paul Haffner, Bishop of Mainz, who wrote me as follows: "It is illogical and untenable that Christianity should impose such strong exactions upon one particular sexual act while the same conditions and even worse exist among women; conditions which are not the results of constitutional or pathological predisposition, as for instance, female pediculation and else, which remains immune from punishment."

Of no small importance was the demand of Cambacérès (1753-1824), Chancellor to Napoleon I and Founder of Code Napoléon, to drop the corresponding paragraph from the French Criminal Code: Avoidance of the filthy and scandalous investigations which so frequently ransack the family life and then cause real trouble indeed. (Compare Chaveau

and Faustin Helie: *Théorie du code pénal*, Tome VI, p. 110).

The truth of this statement is confirmed by the recollection of the trials in England and Germany during the last decades—the mere mention of Oscar Wilde and Philipp Eulenburg—will suffice for any enlightened person. In France, since the Napoleonic law, such scandal-trials—which caused an endless amount of damage not only to the accused and his family but to the entire nation—are an impossibility.

As I have estimated, that, at the most, only 0.001% of such offenses come before the judge, and when we consider the extraordinary difficulty of law enforcement in such cases, the resultant infinitesimal deterrent power of the law, the great uncertainty and indetermination whether the punishable limit has already or not yet been reached, we face the basic standpoint that it can not possibly be the business of the state to concern itself about sexual relations and sexual acts which two adults commit together or upon each other voluntarily, provided they do not violate the rights of a third; taking all these grounds into account, apart from considering the constitutional predisposition, they constitute sufficient reason for the abolition of the special penal laws. In no country, including those with preponderantly Catholic population, did demoralizing or other unfavorable results follow the abolition of such laws.

As many reasons as there may be advanced against punishing homosexual acts, they must be considered and judged differently if they are considered purely voluntary, as was apparently believed when the laws were first enacted—it is still erroneously thought that they are the outgrowth of a "vicious, licentious life," or considered as due to acquired inclination, as a result of seduction—or whether they are the effects of an entirely blameless, usually undesired, sexual constitution. As for the individual with whom the homosexual act has been committed, the vital point is whether his sexuality was changed as a result of it, or whether it remains the same. For, is there a homosexual constitution, there can not be homosexual seduction.

To avoid all misunderstanding, the question as to what is meant by homosexuality must be clear at the start. Homosexuality, or "self-sexedness," is a definite form from which springs cer-

tain feeling which in turn translates itself into certain acts, mostly not those ordinarily imagined. As in sex generally: first, the form (*artung*); second, feeling and inclination; third, action. An act which does not correspond to sensation produces no new form, and retroactively no new sensation. In fact, among the many thousands of homosexual men and women I have learned to know, I have never heard one seriously say that he held another responsible for his homosexual proclivities (it may then have been his progenitors).

In the following I shall briefly enumerate the 12 chief points from whose totality (even though one or another point may be less decisive) anyone whose mind is open to reason will draw the irrevocable conclusion that homosexuality is a question of a "deeply underlying constitutional predisposition."

I. Spontaneous Eruption of Homosexual Feeling.—Homosexual urge breaks its path despite the glorification of love for the opposite sex in literature and in untold works of art; despite the powerful suggestion of the environment in the opposite direction. It breaks through, although the individual, still totally ignorant of the significance of the phenomenon, rejects as something abhorrent that which he hears regarding the homosexual relation. The entire mode of education is directed towards making the boy a complete man; at home and in school he is treated precisely as normal boys, and that which is becoming to the opposite sex is, at an early age, pointed out as unbecoming to him. The same is true in the education of girls.

At the age of 13 to 14, when his comrades begin to enthuse over the opposite sex, the homosexual youth takes pains to emulate them; he is, so to say, embarrassed at having no "flame." Frequently, the first seduction takes place at this time; in Europe, often by the servant girl. A great many homosexuals declare they can definitely remember

that their first excitation was caused by the opposite sex. However, a homosexual will not become a woman-lover as a result of this first sexual excitation any more than a heterosexual will become a homosexual by being seduced, as it often happens, by a person of the male sex.

II. The Difference Already Present in the Child.—Even before reaching puberty, a child, who later becomes homosexual, shows characterological traits of being differently constituted than other children, who when grown up will have heterosexual feelings; *i.e.*, a girlish appearance in the boy and boyish appearance in the girl. Schrenck-Notzig and others see in this phenomenon “a proof of original predisposition to contrary sexual feelings.”

This type was described by me in detail in my lecture “The Urning-Child” delivered shortly after 1900 before a meeting of Naturalists in Kassel. This lecture appeared in *Child Errors* (*Kinderfehler*), a publication edited by the Jena pedagogist, Trüper.

The word “urning” was first used by Karl Heinrich Ulrichs (1862) in correspondence with his relatives. He speaks of “urning-like inclinations, which God implanted in me;” he describes himself as a pure unmixed Uranian; and in one of the letters utters this remarkable phrase: “Uranism is a species of hermaphroditism” (that is, homosexual love is a form of androgynism). In many smaller works Ulrichs later wrote on the subject, he employs the same word, and says that in creating this word-formation he drew on the text of Plato’s *Banquet*: on that part of the famous dialogue where the participants in the Symposium explain love from various viewpoints and finally join in a panegyric of Socrates, their Master. In this speech, there is reference to a mythos according to which those dedicated by Eros to Venus Urania feel themselves drawn exclusively to the male sex. And this, the speaker Pausanias continues, is *paidon eros* = paederasty.

III. Child’s Asexual Subconscious

Urge towards the Future Sexual Object.—Already long before puberty, homosexuals are drawn towards the person resembling closely the type which will later excite them erotically; they are, however, completely in the dark that they are harboring the germ of sexual inclination. To the question asked by 500 homosexuals, having passed the 25th year, as to when they first experienced homosexual stirrings, the following answers were given:

3	
5	
5	5-6
14	6
4	6-7
15	
6	7-8
18	8

70 between 4-8 years

4	at 8-9 years
22	
6	
40	10
32	11
	12
43	13

201 between 8-13 years

68	at 14 years
48	15
25	16
14	17
18	18
4	
6	

183 between 14-20 years

Therefore between 4 and 13 years, 271 = 54.4%

Therefore between 14 and 20 years, 183 = 36.6%

The remaining 9% answered as follows: 5 in earliest childhood; 16 very early; 24 could not remember. A similar ratio resulted from an investigation of 930 other cases.

Magnan, an outstanding French psychiatrist, says: “Inversion of sexual feeling (*inversion du sens génital*) is frequently apparent in earliest youth, which in itself is characteristic; nothing speaks more clearly for the inborn quality of this anomaly than its early appearance.”

Practically all homosexual men and

women can remember that their conscious sexual urge was first awakened by persons of their own sex.

IV. Non-Appearance of Desire for the Opposite Sex.—Potency, as such, is a reflexive process independent of the will. In average homosexuals this force is directed towards their own sex. They are entirely impotent or merely weakly potent with the opposite sex and then only with the help of phantasies centered around their own sex. It is, therefore, conclusive that the homosexual urge is independent of wish and will, and that its phenomenon lies in the individual constitution itself.

V. Content of Sex Dreams.—It speaks for the innateness of the homosexual urge that the first erotic dreams, as well as the later ones, are centered around persons of the same sex.

VI. Harmony between Sexual Personality and Sex Urge.—That homosexuality is constitutional is further apparent from the fact that it is closely bound up with the very essence of the personality. The homosexual man and the homosexual woman differ from the heterosexual man and woman not only in the direction of their sex urge but also by the singularity of their being. This is true not only of the feminine among the masculine; of the masculine among the feminine homosexuals; but the apparently male types among homosexual men and the apparently feminine types among homosexual women also differ from the full sex-types. These apparently homosexual types, as far as they are conscious of their anomaly, endeavor, of course, to hide their peculiarity from the world under the sort of sexual mimicry.

VII. Physical Signs of Recognition in the Homosexual.—As I have previously stated in an introductory article to the first volume of Year Books of Sexual Intermediacy (*Jahrbuecher für sexuelle Zwischenstufen*) entitled "Objective Diagnosis of Homosexuality," and as has long ago been stated by a

Darmstadt physician in a letter to Ulrichs after publication of his writings: "In order to maintain with certainty the undeniable anatomical difference in the nature of both, a careful study of urnings and non-urnings as to the possible and probable existence of differences in their bodily parts should be made." The truth of this statement has been verified during the decades long past.

I shall state only one example of the many stigmata there described: "The muscles of Uranians are softer than those of normal men. There thus exists a natural desire for mild activity such as walking, hiking, climbing, cycling, swimming and dancing. The Uranian's insufficiency in bodily musculature is compensated by the musculature of the tongue, and this type, as in women, has a tendency to considerable volubility."

Even in the distant past, the gait and other motions were recognized by experts as the undeniable sign of the homosexual. His walk is distinguishable by small, tripping, dancing, often slightly undulating steps; his gait is graceful with a slight turning of the shoulders and the pelvis; his trunk inclines forward and the head seems less firm than in pronounced masculine individuals. The walk is so characteristic that, sitting in my office, I have frequently been able to recognize a homosexual as soon as he entered my waiting-room. The human gait is dependent upon anatomical and psychic factors, I mean, that the somatic conditions of urnings—the breadth of the hips, the resultant strongly converging thighs, the weaker development of their bending and stretching muscles—cannot be without effect upon their walk. Psychic differences, of course, are here also significant. In order not to betray himself, the homosexual adopts quiet, grave steps. However, when excited or running, he lapses into his natural gait. A police commissioner once said to me: "My steps were very small and hopping; but I trained myself and lost the habit. But as soon as I walk with a

handsome young man it happens to me again." Very typical are the motions of the arms, especially those called into action by writing, and which are dependent upon other physical and psychic momenta than walking.

Striking proof for the necessity of scientific methods was brought forward by later researches. Among the most significant are the recommended measurements proposed by A. Weil of our Institute in his investigation: "Is There an Anatomical Basis for the Innateness of Homosexuality?" (*Archiv für Frauenkunde und Konstitutionforschung*, Vol. x., No. 1; prize conferred by the *Aerztliche Gesellschaft für Sexualwissenschaft und Konstitutionforschung*). In this work, Weil assembled the results of measurements of 370 homosexuals and 1000 heterosexual men, and arrived at the following conclusion: "More than one-half to two-thirds of all homosexuals show deviation from the 'norm'; anatomical deviation, which means that there is a different physical build and constitution than in heterosexual men." He adds: "In determining this, the question of homosexuality being inborn is answered." These measurements undertaken by an earnest, reliable investigator have up to the present not been contradicted. To doubt them without inquiry or investigation must be rejected as unscientific and unwarranted.

VIII. Ineffectiveness of Extraneous Influences on Homosexuality.—That the homosexual urge is not acquired but inborn is apparent from the phenomenon of its tenacity. Were it caused by external influences, it would be necessary to assume that it would yield to extraneous influences. In such a case, it would be possible not only for the heterosexual individual to become homosexual, but also, for a homosexual to become heterosexual. Both assumptions are at variance with the results of abundant experience. It is certain, on the other hand, that men and women of extraordinarily strong character and will-power were unable to change the direction of

their sex urge in spite of great effort.

Let two instances quoted from letters on the subject confirm our statement. A homosexual writes from Switzerland: "I have always been very strict with myself from my early youth, and taken great pains to master my tendencies. I was successful now and then; unfortunately, however, I have always had the identical experience: the longer and the more stubbornly did I suppress this urge, the more violent was its sudden return. What haven't I done! Firm resolutions, vows, medical advice, water-cures, hypnosis, electricity, systematic deviation from dangerous thoughts by bodily exercises, agriculture, travels, military service, studies, etc. I sacrificed beloved objects; neither religion nor philosophy was of any use. I was morbidly tired of life. For four years I had been passionately in love with a young man of my age. He died at the age of twenty-four without my having been permitted to speak to him of my love. It was a life of hell!"

A homosexual artisan expresses himself as follows: "My very pious mother brought me up in deeply religious faith, and when I realized my emotional state I supplicated God in fervent prayers to help me in my great need. When, despite my self-control and bitter inner struggle, I realized that my condition did not change, I lost my faith in God." Similar letters taken from our questionnaires are legion.

IX. Parallelism in Homosexual and Heterosexual Phenomena.—The innateness of homosexuality is further evident from the complete agreement of the homosexual and the heterosexual urge in all its accompanying spiritual phenomena, its seeking and longing, joy and sorrow, its form and consequences, in its more or less idealistic aspects, in its extraordinary differentiation and general anomalies. If we assume that love for the opposite sex is inborn in the greater part of humanity, we must deduce that analogous phenomena hold

true of the lesser part of mankind and that homosexual love is also inborn.

X. Familial Appearance of Homosexuality.—That homosexuality has a congenital basis is further apparent from the fact that among blood-relations of homosexual men and women are to be found individuals who are similarly endowed and who bear the unmistakable characteristics of intermediacy.

One of the earlier research workers in the field, the Hollander, L. S. A. M. v. Römer, says: "In at least 35% of the cases, uranism is familial" (The Urning Family, Researches into the Ascendancy of Uranians). In complete agreement with this view, as with the many examples which I have quoted in my *Homosexuality in Man and Woman*, is the statement of Walter Wolf in his *Researches in the Heredity of the Problem of Homosexuality* (Archiv für Psychiatrie und Nervenkrankheiten, Vol. 75, No. 1, from the neurological department of the Berlin Institute of Sexual Science): "The results of family-tree study show that homosexuality is an hereditary-biological resultant, the outgrowth of the coming together of collective ascendants, which, though they may have heterosexual perception, are endowed with psychic qualities which correspond to the opposite sex. Such psycho-sexual transitional forms are common in families of homosexuals, less common in normal families. Accordingly, therefore, homosexuality is not to be considered as a biological peculiarity, but as an extreme variant of all transitory forms of sexual structure to be found between mankind and woman-kind. A close theoretical deduction would be the assumption of double psychosexus. Perpetuation of homosexual variants is favored and granted by Nature herself as my family tree researches have shown, through a special attraction tendency whereby the feminine male and the masculine female usually enter into sexual union."

As an example, how such family-tree studies were undertaken in our Insti-

tute, I quote the intersexual family group Fenn (name fictitious) among many similar families:

(A) SUBJECTS FOR EXAMINATION

- (1) Subjects for examination, i.e., the subject and his brothers and sisters;
- (2) parents of the subject;
- (3) brothers and sisters of his father and their children;
- (4) brothers and sisters of his mother and their children;
- (5) father's parents;
- (6) mother's parents;

The sign ♂ = M, means entered in the registration bureau as Male.

The sign ♀ = W, means entered in the registration bureau as Female.

- 1 ♂ 35 years-old: homosexual; merchant; married; wife, cold, egotistic; marriage of convenience; (*male*, 1).
- 2 ♀ 33 years: bisexual; masculine aspect; conspicuously loud voice; married, loves her husband, but also has homosexual female friends; childless; (*female*, 1).
- 3 ♀ 28 years: heterosexual; completely feminine; married; the husband rules in marriage and is completely masculine in aspect; children, aged ♂ 5, ♂ 3, and ♂ 2 years; (*female*, 2).
- 4 ♂ 25 years: heterosexual; engineer; very masculine; hard character; brutal woman-chaser; unmarried; (*male*, 2).
- 5 ♀ 23 years: metatrophic; resolute; sure of herself; rules her husband; childless; (*female*, 3).
- 6 ♂ 21 years: homosexual; merchant; (*male*, 3).
- 7 ♂ 16 years: homosexual; (*male*, 4).

(B) PARENTS

- 1 ♂ Father: merchant; soft; bisexual; likes women and young people; (*male*, 5).
- 2 ♀ Mother: proud; domineering; eager for power; masculine personality; metatrophic; (*female*, 4).

(C) FATHER'S BROTHERS AND SISTERS

- 1 ♂ 60 years: merchant; personality unknown; married; (*male*, 6).
- 2 ♂ Heterosexual: master mechanic; a hard, energetic man; married; (*male*, 7).
Wife: soft, feminine. Children:
1 ♂ died early;
2 ♂ 27 years: bisexual; likes women his own age and older men; soft; married; childless; (*male*, 8). Wife's personality unknown.
- 3 ♂ 25 years: personality unknown; railroad employee; unmarried; (*male*, 9).

- 4 ♂ Homosexual: engineer; feminine; soft, likes older men; (*male*, 10).
 5 ♂ 5 years: girlish in appearance.
 3 ♀ Heterosexual: feminine; normal perception; married; (*female*, 5). Husband energetic; masculine; nine children; their personality not known.

(D) MOTHER'S BROTHERS AND SISTERS

- 1 ♂ Homosexual: opera singer; married an older woman who financed his education; (*male*, 11).
 Child: ♂ entirely masculine; engaged to be married; hotel proprietor.
 2 ♂ Homosexual: musical director; unmarried; (*male*, 12).
 3 ♀ Metatrophic; energetic; highly intellectual woman; self-assured; sober-minded; masculine walk; greatly interested in politics; (*female*, 6). Husband, soft, subservient. Children:
 1 ♂ Missionary bishop in the Orient; soft; kindly; considered to be homosexual; (*male*, 13).
 2 ♂ Normal: wholesale merchant; energetic; married; (*male*, 14). Children; ♂ 6 years, ♀ 4 years.
 4 ♀ Homosexual: energetic, proud; likes young girls; marriage of convenience to a homosexual man; (*female*, 7). Childless.

(E) FATHER'S PARENTS

Father's father: carting business; homosexual; probably bisexual; (*male*, 15).

Father's mother: personality unknown; (*female*, 8).

(F) MOTHER'S PARENTS

Mother's father: personality not known; (*male*, 16).

Mother's mother: metatrophic; very energetic; methodical; wise, independent director of a large commercial enterprise; (*female*, 9).

Therefore according to the above there were in one family, 25 consanguineous relatives past the age of puberty (16 men and 9 women):

5 normally sexed persons.....	3 men and 2 women
4 metatrophic ".....	0 " " 4 "
2 bisexual ".....	1 " " 1 "
10 homosexual ".....	9 " " 1 "
4 (unknown personalities).....	3 " " 1 "
—	—
25	16 9

Although the foregoing presents a singular, and for the inherited quality of homosexuality, a highly important case, still its significance must not be underestimated by assuming that in its

amplifications it represents a rarity. Thus, recently, in a family of five brothers and sisters, I found the fourth to be homosexual; two brothers and a sister had previously consulted me. In a case of eight brothers and sisters there were three homosexual daughters and two bisexual sons. The parents were consanguineous. I have repeatedly been able to observe the three homosexual brothers, two very frequently.

The constitutional character of homosexuality is especially apparent in cases of identical twins. They are always either both masculine or feminine, but in addition to being of the same sex, they also manifest other extensive agreements (the popular saying is: sie gleichen sich wie ein Ei dem andern; "they are alike as two eggs") so that at the beginning even their own parents have difficulty in telling them apart. Conformity in constitutional defects is particularly startling, such as visual disturbances, for instance, deviation in vision (myopia, etc.) to the very refraction of dioptry.

Now let us consider homosexuality in identical twins. In my vast material I have found only two cases of male identical twins. In both cases, the second twin-brother too was homosexual. Spiro of Recklingshausen who has given particular attention to the problem of identical twins wrote me to say that in four cases of identical twins, he ascertained that the agreements also included the homosexual urge. Similar findings were submitted by the Holland physician, J. Sanders, in his recently published *Homosexualiteit bij Tweelingen*

(Tijdschrift voor Geneskunde, 1934). Neither Spiro nor myself has thus far found a case where one sister or one brother of identical twins was homosexual and the other heterosexual. The

one instance referred to by Sanders where such may be the case can not be described as entirely unquestionable; its incidence can not in any way nullify the strength of proof of the above cited cases.

Not only their ancestry and relations but their progeny shows the constitutional character of homosexual men and women. The more I see of homosexual men and women, whether they are entirely or preponderantly homosexual, the stronger is my conviction that—the real crime of homosexuals is their marriage. I am convinced without a shadow of a doubt that men and women who consummate marriage with the knowledge of their homosexual predisposition are guilty of grave deception, at least where they neglect to enlighten the second party in advance and in no uncertain terms.

In my article, "Has Homosexuality a Physical or Spiritual Basis?" (Münchener Medizinische Wochenschrift, 1918), published as an answer to an article by Kraepelin which appeared previously in this publication, I arrived at the following conclusion: The quantitative and qualitative injury to the life of a nation is caused by homosexual marriages only in so far as they frequently eliminate the possibility of propagation by healthy women; also that possible children from such unions are rarely entirely normal.

XI. Equal Diffusion of Homosexuality.—That homosexuality is inherent in the human organization is proven by its uniform diffusion in all centuries and under all skies, among all nations and all occupations within all cultural stages. Homosexuality is not limited to the *genus humanum*, but investigation has proven that among all sexually-divided species of the animal and plant kingdoms there exists always a group of individuals which have the intersexual form and which are attracted, not by heterosexual, but by homosexual partners.

The statement of the anonymous au-

thority, quoted by the well-known naturalist, Gustav Jäger, is undoubtedly well-founded: "For nineteen centuries, even patricide and the most audacious rape were less hateful and abhorrent than homosexuality, and for long periods homosexuals or even those with a reputation of such leanings were threatened with death by fire, and even later with most severe punishments, with dishonor, economic ostracism, severance of all social ties, etc. And see, not to speak of antiquity, modern history shows us plainly a considerable number of famous men—men who filled the world with idealistic concepts, who were equally fine as citizens and human beings and creators, who nevertheless were incapable of mastering themselves sufficiently not to betray their secret passion; princes, powerful and rich individuals, who could afford to keep entire harems, or who could have chosen their mistresses from all the beauties of the world and made them their slaves, yet succumbed to this branding passion. Can one imagine a more forcible argument for the inborn character of homosexuality?"

Statistical data compiled under greatest difficulties, but also with greatest care, have given comparative figures (occurring again and again in mathematical order) regarding the diffusion of homosexuality:

Among 1000 persons, 15 declared themselves as entirely homosexual; 40, bisexual; 8, preponderantly homosexual. These figures show that among us every 66th person is entirely homosexual; every 45th either entirely or preponderantly homosexual; every 25th inclines towards both sexes; and every 18th predisposed to deviation from the norm; these calculations, for example, should mean there are 1,437,500 (2.3% of 62,000,500) homosexuals in Germany; 10,327,000 (2.3% of 449 millions) in Europe; and 41,883,000 (2.3% of 1821 millions) on earth, men and women whose constitutional predisposition is largely or completely homosexual.

The extraordinarily large constancy

of (homosexual) comparative figures must rest upon the identical natural laws on which the sexual proportion of boys and girls (106 male *vs.* 100 female births) is based; here too we find an imposing conformity.

XII. Further Proof of the Innateness of Homosexuality "per exclusionem."

—Among general theories, the one claiming that heterosexual persons may become homosexual and that their acquisition of homosexuality is the prime cause for the changed direction of their sex urge must, on the hand of abundant observation material, be considered erroneous. There are no less than one hundred causes to which the manifestation of homosexuality has been attributed. Not one of these causes, however, withstood careful probing, so that an impartial examination of these allegedly striking facts must lead to the conclusion that genuine homosexuality can not be acquired through external conditions, but that it is an inherent quality rooted in the inborn constitution and that it is inseparably and indivisibly united with the individual's personality.

To Iwan Bloch belongs the merit of compiling in his thorough work, *Beiträge zur Aetiologie der Psychopathia Sexualis*, over sixty "occasional factors" (*okkasionelle Momente*) from which, as was formerly supposed and still is claimed to-day, "homosexual love may arise without any original predisposition" (*anlage*). The insufficiency of practically all these motivations is apparent in the fact that there is probably not one individual who at one time or another in his life has not forcibly and repeatedly been confronted with these factors. Actually, however, only a negligible number of such individuals become homosexual, and only those who originally harbored the tendency. The reasons for this may be found solely in the different psycho-physical make-up of the individual; a different constitution exclusively is the cause for the various reactions of people under the same circumstances.

Therefore the statement of R. Loew-

enfeld in "Homosexuality and the Penal Laws" (*Homosexualität und Strafgesetz*) is singularly true to fact: "Of the various kinds of harm which, according to current opinion may cause the sexual urge to deviate into the homosexual path, not one has been found that was regularly followed by homosexuality. Numerous individuals in the span of life are exposed to such harmful influences, and yet their urge retains its heterosexual character. Even in persons with hereditary neuropathic tendencies, these problematical harms may remain without effect upon the direction of their sexual urge."

According to Bloch's *Aetiologie der Psychopathia Sexualis* there is hardly anything which as a cause of homosexuality could not be drawn into consideration. Among the things which, through their effect, can produce homosexuality there is a considerable number of obvious contradictions. Thus, for instance, we find in Bloch's compilation of the literature, the following as the cause of homosexuality: too hot and too cold climate; asceticism and satiety; celibacy and polygamy; youth and senility; insufficient or excessive sex urge; adulation of and repugnance for physical beauty; the sight of the clothed and of the naked body; life in workers' quarters and in palaces, in shops and on farms. And Sadger declares (*Fragment der Psychoanalyse eines Homosexuellen*): "the regularly to-be-found etiology of passive pederasty is the frequent clyster-enema administered by the mother in infancy."

Further supposed etiological factors which may lead a normal heterosexual individual to homosexuality are occupations corresponding rather to feminine characters, such as cooking, hair-dressing, dressmaking; female impersonations; very vivid or misguided phantasies, especially of artists; religious fervor; abnormalities of the genitals, such as exceptional smallness of the membrum virile; abnormal width or narrowness of the vagina; gonorrhea; castration and eunuchism; physical her-

maphrodism; masturbation; chronic alcoholism; opium addiction; use of hasheesh; effeminism in clothes and manner; need for variation in the sexual relation, which may lead to lust; debauchery; Don Juanism; idleness; boredom; seduction, especially by guardians and in brothels; also by other homosexuals; congregation of people of the same sex in barracks, schools, boarding schools, cadets' quarters, harems, monasteries and convents, prisons, large hotels, theatres and public retiring places.

Still further causes cited are: witnessing animal sexual acts as well as constant association with animals; erotic and obscene literature—even the Bible and the writings of the Church Fathers were held responsible; the sight of erotically-stimulating works of art; contemplation of one's own mirrored image; obscene photographs and pictures; obscene tattooing. Similar effects are ascribed to the following: visits to museums of antique and modern statues, but still more responsible are anatomical museums with plastic reproductions of male and female genital organs; visits to public art exhibitions; ballets, dances, certain scenes in circus performances and variety theatres ("revues" in the modern sense were unknown in older literature); animated pictures, *poses plastique* of heroic or idyllic nature; the sight of men in women's clothes was brought forward as causing homosexuality; further, accidental sight of the male genitalia, for instance, the father's membrum virile; repellent ugliness; fear of venereal diseases; abnormal constitutional peculiarity of the anal region; anal masturbation; flagellation of the anal region; assuming masculine habits (especially by prostitutes); and vice versa, feminine habits in men; mysogyny of the high-liver; male prostitution.

As particular causes of feminine homosexuality, the following are cited: mutual masturbation of the clitoris *cum digito et lingua*; boredom with husband; repugnance of intercourse with man; and finally, the modern woman's move-

ment, which makes the woman self-reliant and cultivates in her a masculine character.

That external "occasional factors" are insufficient for the onset of homosexuality, is easily explained. First of all, the numerous instances are too widely spread to constitute a bona-fide basis. Millions upon millions of people witness sexual acts of animals or visit retiring rooms, and as only an infinitesimal part of them are homo- or bisexual, then according to all rules of logic there can not be any connection between these facts.

If, of the multitudes who live in either torrid or frigid climates; who occupy workers' quarters or mansions; who have a vivid imagination; those deeply religious; those who visit public art exhibitions or museums, who live in schools or dormitories; who see themselves naked in the mirror or engage in ipsation, only a small (and strikingly proportionate at that) percentage are or become urnings, then the recited circumstances in comparison to the decisive causality must be considered as unimportant.

Into the second group belong the not less numerous factors in which the confusion of cause and effect is evident. Homosexual inclination in man does not spring from celibacy or impotence, but celibacy and impotence result from man's homosexual tendency; likewise, woman's feeling of repugnance for the husband is not the cause but the effect of her homosexual nature. Also, the feminine clothes do not mean modification of the inner man, but the inner man obtains such clothes as suit him. The cause of the character does not lie in the garment, but the reason of the garment lies in the character of the wearer. The same is true of chosen occupations. The homosexual does not become feminine because he acts female rôles, but because he is feminine he prefers female rôles.

The third rubric finally embraces that hypothesis which shows a complete lack of knowledge of homosexuals. When

one has examined only 200 homosexuals he is not in a position to write that abnormalities of the genitals, an abnormal constitutional peculiarity of the anal region, repellent ugliness (even Voltaire whose ugliness is proverbial and who lived in the turmoil of the Prussian court where homosexuality was not altogether despised, did not become "so"), or chronic alcoholism, lead to homosexuality. It is simply not true to fact that the average of homosexuals is more ugly, more addicted to drinking, more strongly handicapped with abnormalities of the anal region than the average of the normal sexuals.

It is not less incorrect, of course, to explain homosexuality on esthetic grounds, by great physical beauty of the male sex, as had been done by artists and pseudoscientists and occasionally by homosexuals themselves.

Let us further examine more closely several of the alleged causes, which, although not as frequently as in the past, are given as origins of homosexuality: satiety, ipsation and seduction. Even physicians and jurists still defend the satiety theory. Thus, Wollenberg says that homosexuality in most cases must be considered the end product of a vicious sexual life.

I have taken great pains to find those libertines and roués, and the over-satiated women, of whom it is said that they fall upon their own sex through "raffinement" and wickedness. But I have not been successful. Among the large number of homosexuals I have observed, there was not one who had been satiated with women; most of them had not even once enjoyed one, to say nothing of having enjoyed too many. Homosexual youths having predilection for older men, undoubtedly must have chanced upon "pederast debauchees," though they absolutely deny their existence. But if we follow an analogy, one of these pederastic roués, driven by lust, must at one time or another have resorted to woman. This would then be a way to "cure" them. But it does not happen. In view of my researches, I

consider these over-satiated monsters fictitious, in the same way as witches of whose appearance, acts and habits, detailed descriptions were given at the time of their trials.

Gross, one of our most famous criminologists (Archiv für Kriminalanthropologie und Kriminalistik, Vol. X, No. 1 and 2), is entirely correct in stating that such reversal of taste stands outside of all logic and probability. Need for change (variation) influences activity of course, but it has no effect upon the sexual urge *per se*. And Gross further appropriately says: "The so-called sexually satiated is not satiated, but he feels that of the two paths open to his nature—heterosexual and homosexual—the first was not the right one for him and thus arrives upon the second."

That ipsation is not of decisive importance for the origin of homosexuality is proven by a simple example in arithmetic. If all of 120 orphan boys brought up under the same conditions were addicted to ipsation and later only one proves homosexual; if—another example from life—of 100 persons, 98 are ipsants and of these later only one turns out to be homosexual, 2 bisexual and 96 completely heterosexual, then we can hardly look upon ipsation as sufficient ground for the homosexual urge.

Of the many male and female persons who consulted the writer, there was not one whose psychic urge was altered as a result of ipsation. The heterosexual majority remains heterosexual; the homosexual minority remains homosexual. As far as I was able to ascertain, phantasies also remained the same. They were either heterosexual or homosexual in content. True it is that homosexuals in general continue self-manipulation to an age when in the life of the heterosexual it has already been replaced by intercourse with the opposite sex. This may have prophylactic reasons. Thus, a high Protestant clergyman once came to my office saying that since his 20th year—he was 54—he ipsated twice or thrice daily with homosexual images to guard himself against temptations which might become dangerous to him.

It has been said that ipsation produces

homosexuality because it so undermines the will-power of the ipsant that he "loses courage to go to a woman and goes after men instead." As though, under present conditions it required less courage to accost a male instead of a female, for example, a prostitute! But should potency here be meant, then it must not be left unsaid that as much potency is needed for homosexual as for heterosexual intercourse.

Considering the much-feared seduction, it must be admitted that the normally-sexed occasionally turn to homosexual activity for extraneous, chiefly material, reasons. But it is entirely incorrect to assume that they become homosexual. The act which they perform with a homosexual in such cases is comparable to ipsation and is to be judged as such. Just as soon as opportunity presents itself, they will follow their natural inclination. There are many instances where young men and women who had occasional homosexual intercourse between 16 and 21 were completely heterosexual later.

It has been said that if not through seduction—or more correctly, the consummation of homosexual acts—a heterosexual feeling may be altered into homosexual, and this alteration may occur by psychic force of suggestion in associating with homosexuals; as Tarnowsky once expressed it, by "moral contagion." It must be admitted that fully normal people, chiefly in their youth, may temporarily assume the homosexual "pose." Here, however, can be no question of a lasting metamorphosis. Were it possible to acquire this tendency by suggestion, then the real suggestion which should tend to steer the homosexually predisposed into the opposite direction—autosuggestion, extraneous suggestion to which he is daily and continuously exposed in his journey through life, verbal suggestion of his immediate circle and family—would have long ago extinguished this phenomenon of Nature, the homosexual urge.

The power of suggestion in general

literature—novels, epic poems, dramas and poetry—the central point of which is normal love, is not able to direct the urge of a homosexual man to a woman. When the young man becomes gradually aware that his desire greatly differs from that of his surroundings, and this happens usually at about the age of 20, he generally commences a battle against himself, the fierceness of which has hardly an equal.

And yet literature has often been held responsible for exercising a strong suggestive influence, especially those branches devoted to scientific and belletristic aspects and dealing with the problem of homosexuality. Even authors like Schrenck-Notzing and Cramer believe in "autosuggestion" originating from perusal of such literature. In court-rooms, I have heard again and again from lawyers, judges and experts, the opinion that the accused had "read himself" into homosexuality in Krafft-Ebing—my works too on the problem were occasionally cited as having had that effect. As though there had been no homosexuals long before the scientific investigation of the problem!

However, if many homosexuals possess more books dealing with homosexuality, be they scientific or literary, than we find in possession of others, this is explained simply by the fact that the homosexual, in his desire to enlighten himself as to his condition, tries to procure such reading. Homosexuality therefore results not from such reading, but such reading is the result of homosexuality. Furthermore, there is a large number of homosexual men and women who have never read a book on homosexuality and yet are entirely homosexual.

The much-repeated theory, first enunciated by Binet, that contrary sexual perceptions are due to "pathological associations" in earliest childhood, a *choc fortuit*, a psychic trauma, has not been confirmed by factual material and remains, therefore, an unsupported hypothesis. Were it material whether the first erection was produced by a man

or by a woman, then the number of homosexuals would be much larger, for it is a proven fact that many children are first stirred by the comrades of their own sex. How could such a shock bring about such a metamorphosis of the entire physical and mental make-up as we frequently find in the homosexual? I well remember the remark of a colleague to whom I once introduced a homosexual whose every feature, every movement, voice and manner, revealed a born homosexual. My colleague exclaimed with fine irony: "What a strong *choc fortuit* he must have received!"

Binet's conception of the origin of homosexuality, which has found ready reception chiefly with the French, shows a certain relationship to the theory of Freud in that both ascribe decisive importance to infantile sexual influences. True, the Freudian school does not attribute compulsive homosexuality to a sudden shock, but claims it is caused by a peculiar attachment of the child to its immediate surroundings, particularly to its mother. We, on the other hand, see in the mother fixation of feminine sons and the father complex of masculine daughters certain phenomena resulting from the psycho-physical peculiarity of the children; this peculiarity is constitutional, as is homosexuality, which later develops from the same basis.

It seems to me that more conclusive proofs than here assembled, bearing upon the actual existence of deeply rooted constitutional predisposition (*anlage*), cannot be advanced. As far as the statements of these persecuted persons are concerned, to believe them implicitly would perhaps be asking too much. What, however, should be demanded, in view of these unjust persecutions by law and society, is that their claims be investigated. Here then is where the lawmakers and those who influence the making of laws have a distinct duty, and in the present state of scientific knowledge it should not be difficult for them—without however, having recourse to court proceedings which

tend only to dim the clear outlook—to persuade a considerable number of homosexual men and women, in every stratum of society, to enlist in the cause of this phase of cultural progress.

The conclusions reached by us and others found their confirmation in the brilliant experiments—to alter the psycho-physical sexual characteristics—of Steinach (Vienna), Pézard (Paris), and Knud Sand (Copenhagen).

Finally: Steinach's belief—opposed by Benda and other investigators of interstitial tissues—that he has actually found female cells in the sex glands of homosexual men, seems to matter less to me than the fact, proved beyond doubt, that male, female, and intersexual constitutional types can be created at will by implanting certain sex glands in diverse species of animals; in other words that, like the male and female sex type, the intersexual, in its varied stages, is dependent upon the gonads.

M. H.

HOMOSEXUALITY, DEFENSIVE

[HOMOSEXUALITY AS A DEFENSE AGAINST INCEST].

I.

There will be presented here some research findings which point to fear of incest as a major determinant of human homosexuality. Although this factor is of sufficient importance, in my opinion, to justify its separate consideration in an encyclopaedia sexualis, I do not present it as a specific or essential "cause." In fact, no specific etiology can be claimed for any of the known psychopathological formations, once we exclude the obvious resultants of injury, infection, chemical intoxication, arterial changes, neoplasms and endocrinopathies.

In dealing with the total determinant-resultant sequence that comprises the maladaptive aspects of an individual life the significance of any one factor can be arrived at only in terms of its ontogenetic relationship to all other known factors. A still more fundamental approach to the appraisal of a given factor also calls for an examination of its phylogenetic

background. It was this latter consideration which led me to divert a considerable amount of time to studies in comparative psychology during the earlier years of my work as a psychiatrist.

From 1908 to 1917 I made systematic observations of the sexual behavior of monkeys under both captive and non-captive conditions in a live-oak woods near Santa Barbara, California. Twenty different animals—seven females and thirteen males—were used during this period. Three of these, a male and two females, were born in the laboratory woods and survived to the end of the research. Two females and three uncastrated males were acquired before they had reached sexual maturity. Six of these eight young subjects attained sexual maturity while they were under observation. Three castrated males—one adult and two half-grown ones—were acquired. The other nine subjects were sexually mature when purchased. The one unclassified female was larger than any of the other females. There was also one unclassified male. He so far exceeded all the other monkeys in size that impending contact with him invariably precipitated flight on the part of his fellow-males. Eighteen of the twenty monkeys were of the familiar rhesus and cynomolgus types, three of them being crosses between these species.

Methods were developed for experimental arrangement of situations which could be fairly well controlled and repeated at will. The research plant in the woods included a primate building which was partitioned off into eleven large cages. Each cage had a door opening into an enclosed common alley, and this in turn opened into a large terminal room, the top and three sides of which were of wire netting. I was thus able to restrict and arrange the social contacts of all the animals whenever they were called in from the woods for experimental purposes.

The results of these studies have been published in detail elsewhere (⁹), hence only a brief summary of them will be given here:

(1) Homosexual plays were of daily occurrence among the non-captive immature males, regardless of the availability of the females. The smaller of a pair of copulating males would generally assume the passive (female) position, but at times the larger male would play the female rôle. Heterosexual behavior was also observed among immature males.

(2) Any male, mature or immature, was likely to assume the female position for copulation when attacked by a more powerful fellow of either sex if escape by flight was impossible. A typical observation taken from my records will illustrate this:

During one of the studies of defensive homosexuality all of the animals were kept in the cages. The alley made it possible to sort them out into couples and groups for separate imprisonment. By leaving open the alley doors of two or more cages it was possible to determine whether a given animal would seek escape from or contact with particular groups or individuals. In one experiment all doors leading into the alley were opened excepting the one in the cage which confined the very large and powerful male already described. He was, therefore, the only animal who did not have free range of ten cages, the alley and the terminal room.

After the monkeys had fought their way through to some sort of tribal integration the big fellow was admitted to the alley. All of them fled at his approach excepting the largest of the females. One recently weaned little male darted into an empty cage and crouched in a corner on the floor. The giant followed, leering at him as if about to attack. The little fellow squealed in terror and looked about for an avenue of escape. Finding none, he assumed the female position of copulation. His enemy now displayed only friendliness and mild sexual excitement, but the youngster ducked between his legs and escaped.

(3) Assumption of the female position by a fellow seemed almost automatically to precipitate a copulative

(male) reaction in an aggressively hostile monkey of either sex, regardless of the sex of the submissive one. A monkey dashing to a ferocious attack upon a fellow would promptly cease to manifest hostility if the intended victim assumed the female position. If the aggressor was a female she would mount her victim, make a few perfunctory copulative movements, then turn to some new interest.

(4) Mature males would sometimes lure weaker males to them by assuming the female position, only to spring at the intended victim as soon as the homosexual bait brought the latter close enough to make escape impossible. Such behavior lacked all appearance of sexual motivation on the part of the luring male, who would move to attack before sexual contact occurred. Mature females were also apt to resort to the same trick in luring weaker or more timid female enemies to them.

(5) During all my nine years of research with monkeys I observed only one episode of homosexual behavior between two females in which there was definite evidence of sexual excitement on the part of either participant. This occurred when "Kate," a mature female, was freed after more than a year's imprisonment and consequent separation from her immature, non-captive daughter, "Gertie." As soon as mother and daughter met they rushed into a front-to-front embrace, then "Gertie" dropped to all fours, turned her posterior to "Kate" and assumed the female position. The mother promptly mounted her and made male copulative movements. Both animals smacked their lips and displayed sexual excitement. They were never again observed to manifest any sexual interest in each other.

(6) No uncastrated sexually mature male was ever observed to assume the female position unless there was a defensive need of doing so or an obvious intention of luring a timid enemy to non-sexual combat.

(7) Nursling monkeys of either sex

would assume the female position almost reflexly on the approach of any large monkey if the mother was not close at hand, but with obvious manifestations of terror and none of sexual excitement.

(8) The three castrated males were the most timid members of the tribe, and although one of them was of adult size, he disclosed the same preference for homosexual behavior that was characteristic of the two smaller ones.

II.

When we turn to the well-established fact of human bisexuality we are confronted by a question as to what, if any, normally adaptive expressions it can have in consciousness and behavior. The bisexuality of infra-human primates offers an experimental approach to this problem which deserves far more attention than has been given to it by comparative psychologists, but such findings as are available seem to me to throw a considerable light on human homosexuality. The research discussed above discloses, in my opinion, certain general adaptive needs which are met by infra-human bisexuality:

(1) During immaturity the balance between homosexual and heterosexual tendencies is so nearly even in the male monkey that his erotic impulses can find satisfying expression in sexual plays with fellow-males. This outlet sufficiently reduces the strength of his heterosexual compulsions to insure him against entering into dangerous competitions with adult males for possession of the females.

(2) Although the balance tips heavily in the heterosexual direction when sexual maturity is attained, the adult male remains sufficiently bisexual to be capable of assuming the female position whenever there is defensive need of doing so. Tribal integration and, in the end, species survival would be impossible if flight were the only defense against the hostile aggressions of stronger fellows. For this reason it is not only important that the male of any

age should be ready to play the female rôle in a defensive emergency, but that the aggressor should respond sexually to the female position, regardless of the sex of the submissive one.

(3) Copulation involves no structural injury to the immature male, but such a danger exists for the immature female. The latter, being under no heterosexual compulsion to compete with the mature female for male sexual favors, has no need, according to my theory, of engaging in homosexual plays before maturity, and she does not, in fact, engage in such plays. On the other hand, she is sufficiently bisexual to be capable of offering herself for copulation to hostile females at any age, whenever there is a defensive need of doing so. The screaming flight of the female nursing to her mother before sexual contact can occur when the female position is assumed as a defense against an approaching male or female gives us valuable evidence on this point.

(4) The readiness of the adult female to accept an invitation to play the rôle of copulating male when she has directed a hostile attack against a fellow of either sex again discloses the adaptive value of retained bisexuality, since it is in the interests of both individual and species survival.

(5) The tendency to lure a timid enemy of the same sex to combat by feigning readiness to sustain the passive sexual rôle discloses another phase of the adaptive value of bisexuality: the individual's standing in the tribe is always enhanced by victory over another fellow.

III.

If, as can be indubitably established by appropriate methods of experimentation, homosexual behavior is at times resorted to as a purely defensive measure by the infra-human primate, a question arises as to whether defensiveness is a factor in the determination of human homosexuality. My studies of compulsive alcoholism, certain types of the

manic-depressive psychosis and overt human homosexuality have led me to the conclusion that fear of incest is a more important factor in the development of sexual inversion than is generally recognized.

(1) As early as 1908 Abraham¹ called attention to the fact that homosexual tendencies which are usually repressed are likely to become evident when a man is drunk. In line with this observation I have found, in common with almost all other psychiatrists, that the periods of prolonged and excessive drinking of the compulsive alcoholic are precipitated by an unconscious need to ease tensions engendered by repressed homosexual urges. An occasional compulsive alcoholic will be frankly, overtly homosexual during his sprees, but as a rule these patients do not go beyond socially allowable verbal expressions of their loyalty to and admiration of male friends. Although they are not, as a rule, rated as being anything less than perfectly heterosexual by themselves and their friends, it is easily apparent to the trained observer that only a very thin repressive line separates them from their overtly homosexual brothers.

Two almost unfailing observations led me to study the compulsive drunkard's mother: (a) her over-possessive love of him during his infancy and early childhood, and (b) her underlying hatred of his wife, no matter how wise, devoted and long-suffering the latter may be. I found that the typical mother of such a patient is the kind of woman who obviously, albeit unconsciously, turns to her male child for the emotional satisfactions that are normally found in the spousal relationship. In some cases the early death or defecation of the husband, more rarely his impotency or repellant unworthiness as a human being, could be blamed. In the majority of cases the fault lay with the mother's own repressions, which prevented her from developing an adult love life.

I do not mean to imply that the mother of the future compulsive alco-

holic makes conscious overt sexual advances to her male child. She avoids direct genital contact with him and is often quite intolerant of his masturbation, "unclean thoughts" and anything suggestive of erotic advances on his part toward females of his own age. Her eroticism toward him takes the form of much kissing, fondling, verbal endearments and a not over-subtle maternal coquetry. Even after he has reached adolescence and has fallen in love with a girl of his own generation, such a mother will reproach him for his infidelity to her, demand assurance that he loves his maternal "sweetheart" best after all and display a very real jealousy.

Illness in the family, an unexpected guest or any other excuse for juggling the family sleeping arrangements are made occasions for occupying the same bed with her son. One victim of a subtly incestuous mother told me that he and his mother slept together all during the winter he came into puberty. Illness in the family was her excuse. In another case the mother of two future drunkards would playfully crawl into bed with them on Sunday mornings from the time they were little boys until they had reached an age when either of them could have made her pregnant. Examples of this kind could be endlessly multiplied, but in each case the situation described would be essentially the same: a mother's persistent efforts to keep alive and even to augment the incestuous tendencies of her male child.

When we study the victim of the unconsciously incestuous mother we find that the dynamic sequence is fairly simple in its general outlines. The primary direction of his major sexual impulse is heterosexual—with the mother as love-object. This incites fear and repulsion at a functionally higher (i.e., more nearly conscious) level of response, and there is a sharp deflection of the impulse from mother and femaleness in general toward maleness. Other important factors enter here, such as the castration-anxiety of the Oedipus period,

regression to narcissistic choice of love-object and, in certain cases, endocrine set-up; but my observations as a comparative psychologist and, later, as a psychoanalyst strongly incline me to the opinion that fear of incest is the most important of the factors involved in the over-development of the homosexual tendency.

In the compulsive alcoholic, homosexuality has a demonstrably defensive motivation, but this in turn is feared and repressed. All that comes into consciousness is an urge to ease an intolerable tension and at the same time to obtain a sense of indubitable masculinity. Alcohol satisfies this need and effects a partial release of primarily heterosexual impulses, thus making it possible for the heavily drinking compulsive to function with prostitutes or other women who are not too easily identifiable with the forbidden mother.

It is an extremely significant fact that the compulsive alcoholic usually becomes sexually impotent for his wife if and when the usual maternal element creeps into their relationship. He will cling to an attractive and devoted young wife and fall into a frenzy of despair when she threatens to leave him, but he will also avoid sexual relations with her. Many of these men are sexually frigid toward all women during their sober intervals. It is only when they are drunk that they seek sexual release in sexual orgies with prostitutes or women of their own class who are merely good play-fellows for whom they have no significant affection.

(2) Manic-depressive cycles present some very intricate psychodynamic problems related to the pregenital stages of libidinal development, hence the observations which directly follow have reference to the incest-homosexuality sequence as merely one component of a far more complex determinant-resultant sequence than can be discussed here.

One type of manic-depressive patient is excessively alcoholic during the excited phase, and either very temperate

or wholly abstemious at all other times. During the excited phase, after prolonged, excessive drinking, the ordinarily repressed homosexual tendencies break through, either to direct expression in behavior or as delusions to the effect that enemies are accusing him of homosexuality. When such a patient submits himself to a psychoanalysis during a free interval the naïvely presented first few dreams disclose a high degree of unconscious preoccupation with incestuous fantasies, but the free associations elicited by the usual analytic instructions cluster around homosexual themes.

In another group of manic-depressives one finds, instead of alcoholism, a compulsive need of close and ardent friendships with persons of the same sex. This does not ordinarily involve genital or other overtly sexual expressions of love, but it calls for a pathological degree of repression. Here, too, we find that the patient's sexual impulses are primarily directed toward incestuous satisfactions, and that their homosexual trends are merely a defense against incest. Either at the fastigium of the excited phase or when the depressed phase reaches a severity which involves serious clouding of consciousness, the deeply repressed incestuous trends find their way to overt verbal expression. The manic patient will either freely express incestuous longings or accuse a parent or a sibling of the opposite sex of such longings. The confused, hallucinated melancholiac will hear voices accusing him (or her) of incestuous behavior.

There is a type of manic-depressive patient who never marries, and among these I have found a considerable number of patients who were thrown into a panic by the imminence of marriage or even of a proposal. Whenever it has been possible to make intensive studies of such cases I have found that the prospective spouse was rejected because he (or she) had acutely acquired the reactive value of an incestuously loved parent or sibling.

One young woman who discovered

that she could not marry the man she loved because "it would be like going to bed with father," became frantically dependent on the affection of a girl friend directly the engagement was broken. There had been a tranquil, unemotional friendship between the two girls for years, but now my patient demanded that their relationship should move over onto a highly emotional basis.

In another case a girl who had never been conscious of any homosexual longings attributed each of her three broken engagements to her inability to escape a feeling that, because she loved her fiancé (a different man in each case), it would somehow be unnatural to have sexual relations with him. I was summoned to see her during the height of her third depression. I found an extremely agitated patient who would not talk to me until the nurse was sent out for a walk. The patient then told me that she had just discovered to her horror that she had an uncontrollable impulse to make sexual advances to the nurse. After some difficulty I persuaded her to admit the nurse to a three-cornered conference about the matter. My reassurances not only calmed the patient but, as subsequent events proved, gave the nurse courage to yield to her own consciously but timidly held homosexual inclinations. Without any connivance on my part the two effected a permanent homosexual union. The patient got well and has remained free of attacks for more than a decade. The fact that she had three manic-depressive cycles during the third decade of her life and none thereafter leads one to suspect that in her case an overt and stable homosexual union was a sufficient prophylaxis. She was predictably in for many subsequent attacks unless a successful analysis could be had, and external circumstances rendered this impossible.

(3) Overt homosexuality has a complex and variable determination, but there is one factor which, I have begun to suspect, may be invariably present:

I have not yet made an intensive study of an overt homosexual who has failed to tell me, *without leading or other kinds of suggestive questioning*, that he (or she) was conscious of having been erotically loved by a parent or sibling of the opposite sex. Even the manic-depressive young woman just alluded to volunteered the information that she had always felt that an element of sexual passion entered into her over-demonstrative father's kissing and fondling, and that her somewhat older brother made definite sexual advances to her when she was approaching puberty.

Another young woman—not a manic-depressive—had copulated with an older brother all during childhood. A year or so before her first menstruation he returned home after a six months absence. He had come into puberty and his sex organ had greatly increased in size since their last sexual contact. Their first and only copulation after his return caused her considerable pain and his emission terrified both of them. Fear of pregnancy, an acutely developed sense of guilt and repulsion, and an antagonistic attitude toward the brother directly followed. During her twenties she was easily seduced by a homosexual woman and was jealously in love with her when the anamnesis was taken.

I have published elsewhere¹⁰ accounts of sexually maladjusted women for whom heterosexuality had, *per se*, the reactive value of incest, and in a recent publication Fenichel² made a similar observation. When such a reactive value is established for heterosexuality in consequence of overtly incestuous behavior during childhood, the defensive need of interposing an over-developed homosexual tendency between incestuous longings and consciousness seems to be imperative.

Freud⁸ makes the following sweeping statement concerning overt male homosexuals: "In all the cases examined we have ascertained that the later inverts go through in their childhood a phase of very intense but short-

lived fixation on the woman (usually the mother) and after overcoming it they identify themselves with the woman and take themselves as the sexual object; that is, proceeding on a narcissistic basis, they look for young men resembling themselves in persons whom they wish to love as their mothers loved them."

My own case records justify me in making an equally sweeping statement as to the invariability of this finding in the histories of male inverts, and in stressing the defensive value of their inversion. To this observation I would add that such fixations are almost without exception demonstrably due to the veiled but unmistakable eroticism of "the woman" in her treatment of the future invert. The incestuous aggressiveness of this kind of mother love leaves her male child no alternative to homosexuality but incest. He must either go on surrendering to his mother as love object or defensively direct his sexual impulses away from femaleness in general.

IV.

Psychoanalysis offers the most productive of all research techniques for teasing out the detailed psychodynamic structure of overt homosexuality. Its soundness and adequacy as a theory of mind must be credited with this circumstance, but it is also true that the over-developed narcissistic exhibitionism of the invert and the impaired repressive strength of his ego greatly facilitate the exploration of his unconscious processes. For this latter reason the patient's verbal productions on the analytic couch will usually supply a mass of extremely valuable research material before his unconscious resistances require the analyst to add anything to his initial instructions.

Once the homosexual realizes that he must let his stream of consciousness flow through his mind as an unhindered, undirected, uncriticized response to dream components, and that he must hold nothing back from verbalization on the couch, the analyst can

play a purely passive rôle during a prolonged initial period of analysis. For this reason, and because their material is so strikingly uniform, the findings of Freud and his followers can be taken as a collection of scientifically established data.

The male homosexual under analysis unerringly uncloaks that period of infancy which was dominated by incestuously directed impulses. While this is a common denominator of all male infantile experience, it is of abnormal intensity with the homosexual. Its abnormal intensity is due, in my opinion, to a correspondingly intense erotic component in the maternal love to which he is subjected. Freud's already quoted statement as to the future invert's fixation on "the woman" sums up a finding which no homosexual male patient of mine has ever failed to verify.

Fenichel³ has brought together a series of generalizations which I have found to be very helpful in my efforts to tease out this one important strand in the psychodynamic tangle presented by overt homosexuality:

(1) He states that "an inner psychological circumstance" excludes woman as a sex object for the male invert.⁴

(2) Homosexuality, in his opinion is "like a screen memory"⁵ against a repressed heterosexuality which is primarily incestuous. I am quoting him out of full context here. He duly stresses the other factors that enter into account in addition to fear of incest.

(3) Homosexuality is a special outcome of the oedipus-castration anxiety. In other words, the future invert so greatly fears castration as a punishment for his incestuous longings and his consequent death wishes against the father that he eschews heterosexual gratification as his consciously held erotic aim. If he copulates with women at all it is usually for the sake of having children or for his own reassurance; he typically speaks of heterosexual experience as unsatisfying.

Nevertheless, even the male invert who is exclusively homosexual unconsciously longs for heterosexual relations. To quote Fenichel⁶ literally, "It is possible to show in all cases of homosexuality . . . the original heterosexual orientation which was rejected as a result of castration anxiety." Fenichel⁷ is unnecessarily cautious, in my opinion, in a further statement: "We may, therefore, state as a provisional formulation that for certain individuals, normal sexuality unconsciously

means incest and is perceived as entailing danger of castration." In my experience this holds true in all cases of overt homosexuality I have studied and is usually found in those cases of pathologically repressed homosexuality to which one attributes certain types of the compulsion neurosis, psychical impotency, compulsive alcoholism and the manic-depressive psychosis.

The limitations of this article forbid an elaboration of the psychoanalytic material which would have to be taken into account if an attempt were made to trace the dynamic relationship of fear of incest to all the other known factors entering into the determination of homosexuality. It is necessary, however, to make at least a brief allusion to the tendency of the libido to regress to earlier stages of its development when fear, frustration or the general tendency of the infant to socialize its impulses interfere with the achievement of heterosexual object love. This regressive tendency is marked in the overt homosexual who, at maturity, is preponderantly narcissistic, incapable of object love, still hobbled in his emotional life by the repression of an unresolved oedipus complex and more or less fixed at the anal level of libidinal development.

V.

In summing up the findings of my own studies in comparative psychology, objective psychopathology and psychoanalysis, and correlating them with the well-established findings of Freud and his colleagues, I have arrived at two still tentatively held conclusions:

(1) The homosexual tendencies that are a normal component of human bisexuality are apt to be over-developed as a defense against incest toward the end of infancy by males who have been too erotically loved by their mothers or mother surrogates. Female homosexuality is likewise a defensive against incest, but it has a more complex determination, and post-infantile factors, such as the sexual aggressions of brothers or the too erotically tinged affection of fathers, usually play an important rôle.

(2) The character traits of the overt homosexual are due to regressions from the phallic stage of libido development to earlier stages, and this in turn is a flight from incest. In this

sense the character traits of the homosexual as well as his actual inversion are defensive against incest.

¹Karl Abraham, *Selected Papers*, 1927, p. 83; ²Otto Fenichel, *Outline of Clinical Psychoanalysis*, 1934, p. 264; ³idem, pp. 244-64; ⁴idem, p. 248; ⁵idem, p. 263; ⁶idem, p. 257; ⁷idem, p. 264; ⁸Sigmund Freud, *Three Contributions to the Theory of Sex* (tr. by Brill), 1916, p. 11; ⁹G. V. Hamilton, *Journal of Animal Behavior*, vol. iv, pp. 295-318; ¹⁰idem, *Introduction to Objective Psychopathology*, 1925, pp. 39-45.

G. V. H.

HOMOSEXUAL TWINS. The question whether homosexuality is hereditary can be investigated in two ways: (1) by family research; (2) by twin research.

The first method, the family research, is not to be recommended for this special investigation. It is very difficult to get to know which members of a family are homosexual. The tendency of wife, sons and daughters is not known to the husband and father and vice versa. And as a rule it is impossible to get information about the sexual life of parent and grandparents. We only possess genealogies of some royal families of which some members are homosexual.

The second method, by twin research, is theoretically better. This method is based on the difference between identical or one egg twins and non-identical or two egg twins. One egg twins always are of the same sex, two egg twins not. One egg twins are genotypical the same, two egg twins not. So one egg twins are hereditarily identical, two egg twins not. How do we know, that a twin is identical or not? We can investigate the membranes and placenta. But according to Von Verschuer these diagnoses are to a large extent incorrect. Moreover we can not investigate the membranes and placenta afterwards, when we meet the twin in our laboratory at a more advanced age. Better it is to apply the polysymptomatic method of Siemens-Newman-Dahlberg-Von Verschuer-Curtius. This method can be used at all ages of the twin.

Let us suppose that we have 100 iden-

tical twins and 100 non-identical twins (of the same sex). We will investigate the heredity of a characteristic, viz. the form of the palate. We find as follows:

The form of the palate is for 80% the same by identical twins; and for 15% by non-identical twins. We say: 80% are concordant and 20% discordant by identical twins, and 15% respectively 85% by non-identical twins. Now we can conclude that the form of the palate is to a large extent fixed by one or more genetical factors. But if we find the same percentage by identical and non-identical twins the conclusion is, that the form is independent of any genetical factor.

If we apply this method to homosexuality we must investigate homosexual identical and non-identical twins. Unfortunately it is very difficult to find such twins. Twins are not so numerous. Nearly 1 of 80 births is a twin-birth. And a homosexual usually is very mysterious about his sexual life, because homosexuality is considered by most people as a degenerated, despicable characteristic. So it is not to be wondered that homosexual twins are never described in literature. Magnus Hirschfeld told at a genetical congress in Berlin (1927) that he had investigated 3, and his assistant Spiro 4 identical homosexual twins, which all were concordant. He had in his material various non-identical homosexual twins, all discordant. Johannes Lange describes in his publication (*Verbrechen und Schicksal*) 2 identical twins: one is concordant, the other discordant. But the discordant one is perhaps the result of a trauma at birth; so it would be pseudo-homosexual.

We have had the occasion to investigate 8 homosexual twins, of which 7 are identical and 1 non-identical. These twins are extensively described in the review (*Genetica*, 1934, pp. 402-36). Six identical twins were concordant, one was discordant; the non-identical twin was discordant. It must be said that the discordant identical twin was a case

of pseudo-homosexuality, because this man did have epilepsy and afterwards he became homosexual.

This investigation, together with the nine cases of Ilirschfeld, Spiro and Lange, is a strong proof for the heredity of homosexuality.

J. S.

HONEYMOON ASSAULT. Violent defloration on the wedding-night, causing the bride physical injury and psychic trauma; it is held responsible for many cases of subsequent frigidity.

HORMONES, THE FEMALE SEX

DEFINITION.

HISTORICAL.

SEX CYCLE IN THE HUMAN FEMALE:

- (a) TERMINOLOGY.
- (b) ABORTIVE CYCLE.
- (c) FERTILE CYCLE.

I. PREPITUITARY AND PREPITUITARY-LIKE HORMONES (GONADOTROPIC FACTORS).

- (1) SOURCE OF THE HORMONE.
- (2) CHEMICAL AND PHYSICAL CHARACTERISTICS OF THE PREPITUITARY HORMONE.
- (3) TEST FOR THE PREPITUITARY HORMONE.
- (4) NOMENCLATURE.
- (5) PHYSIOLOGY OF THE PREPITUITARY HORMONES.
- (6) EFFECTS OF GONADS UPON THE PITUITARY.
- (7) EXPERIMENTAL EVIDENCE.
- (8) DISEASES OF THE PREPITUITARY GLAND AFFECTING THE FEMALE SEX ORGANS.

"OVARIAN HORMONES."

II. THE FEMALE SEX HORMONE (ESTROGENIC

- (1) SOURCES OF THE HORMONE.
- (2) CHEMISTRY: BRIEF OUTLINE OF THE PREPARATION OF THE PURE CRYSTALLINE HORMONE.
- (3) TESTS FOR THE FEMALE SEX HORMONE (ESTROGENIC FACTOR).
- (4) NOMENCLATURE.
- (5) PHYSIOLOGY OF THE FEMALE SEX HORMONE (ESTROGENIC FACTOR).
- (6) CHANGES IN THE ESTROGENIC FACTOR IN DISEASE.

III. CORPUS LUTEUM HORMONE, NIDATORY FACTOR, PROGESTIN.

- (1) SOURCE OF THE HORMONE.
- (2) CHEMISTRY OF PROGESTIN.
- (3) TEST FOR PROGESTIN.
- (4) PHYSIOLOGY OF PROGESTIN.
- (5) THE PLACENTA.

- (6) CHANGES IN THE PROGESTATIONAL FACTOR IN DISEASE.

- (7) CHEMICAL RELATIONS BETWEEN ESTROGENIC AND PROGESTATIONAL HORMONES TO CHOLESTEROL AND CARCINOGENIC SUBSTANCES.

Definition. Hormone, a term introduced by Starling, signifies *a messenger* from the Greek, *ὁρμαω*, to arouse. The hormones are well-defined chemical entities which circulate in the blood and act upon individual organs or organ complexes (response organs, end organs). The sex hormones include the gonadotropic hormone of the pituitary which stimulates the gonads of both sexes, but does not act directly upon the tubular sex organs: fallopian tube, uterus, vagina in the female; prostate, seminal vesicles, epididymis in the male. The two "ovarian" hormones are the *female sex hormone* or estrogenic factor, and the *corpus luteum hormone* or nidatory factor, which act directly upon the tubular sex organs.

Historical. The ancients were well aware that the sex phenomena depended upon the gonads: testes in the male, ovaries in the female. Castration has been practised, particularly on the male sex, since the dawn of history and even the ancients realized that the removal of the ovaries produced cessation of the sexual phenomena.

The ovum was first recognized by de Graaf,²⁶ 1672. Von Baer,⁸⁹ in 1827, described the corpus luteum. Transplantation of the ovaries with consequent continuation of the sexual phenomena was first performed by Knauer,⁶⁶ also Halban,⁵⁴ as early as 1900. Prenant⁷⁹ as well as Born and Fraenkel suggested that the corpus luteum was a gland of internal secretion about the same time; in 1903 Fraenkel³⁸ showed that the successful implantation of the fertilized ovum depended upon the presence of the corpus luteum. For the succeeding 20 years, the attention of investigators was mainly concentrated upon the yellow body or corpus luteum. Leo Loeb⁷⁰ as well as Bouin and Ancel,¹⁸ by means of ingenious experiments, gave addi-

tional proof to the Born-Fraenkel theory of nidation. Between 1912 and 1917, Iscovesco,⁶⁸ Aschner,¹⁰ Fellner,³² Frank and Rosenbloom⁴⁸ demonstrated that lipid extracts of the corpus luteum and placenta were able to produce uterine and breast changes such as occurred normally in the sex cycle and progestationally.

During the same period, morphologists, especially Robert Meyer⁷⁷ and Schroeder,⁸⁰ studied the correlation of the ovarian and uterine changes occurring in the human female on specimens obtained from operation and autopsy. Engelmann,²⁸ of St. Louis, in 1875 had already demonstrated that the human uterine mucous membrane underwent regular and distinctive changes during the menstrual cycle. This overlooked and forgotten observation was rediscovered by Hitschman and Adler⁶² in 1908. Heape⁵⁷ in 1899 had studied and described analogous changes in the uteri of various species of animals.

A new era was ushered in by the discovery that the female sex hormone or estrogenic factor was present in great concentration in the follicle fluid (Frank,³⁹ 1922; Allen and Doisy,³ 1923). In 1925, Loewe,⁷¹ and simultaneously Frank and his collaborators,⁴⁴ demonstrated this estrogenic factor in the circulating blood. In 1927, 1928, Philip E. Smith,⁸⁴ and Zondek⁹³ and Aschheim, almost simultaneously, showed that the ovary was activated and stimulated by a hormonal factor secreted by the anterior lobe of the pituitary. W. A. Allen and Corner,⁶ in 1929, succeeded in concentrating a crude extract of the corpus luteum which not only produced the prenidatory or progestational changes in the uterus of the castrate, but also allowed an impregnated castrate to continue pregnancy to term by the injection of this progestational factor called by them, progesterin.

Finally, in quick succession, Doisy,²⁷ Butenandt,¹⁵ and others succeeded in purifying and crystallizing the estrogenic factor and in determining its chemical formula and structure. Since

then, Slotta, Rusehig and Fels,⁸⁸ Allen and Wintersteiner⁷ (1934) have purified, crystallized and determined the formula of progesterin.¹⁸

Sex Cycle

Terminology. It will be necessary to confine our remarks to mammals. Heape,⁵⁸ in 1901, introduced a nomenclature, which has been accepted generally, describing the sex cycle. In animals there is a *breeding season* which includes pregnancy and lactation. In certain species only one cycle occurs during the breeding season (*monestrus*); in others, if impregnation does not occur, repetitions of the cycle take place (*polyestrus*). The cycle itself is divided into a period of quiescence (*anestrus*), a preliminary period of growth and secretion called *proestrus* ("coming on in heat"), and *estrus* or the period of heat during which alone in all forms below the anthropoid, copulation is accepted by the female. If no pregnancy develops, a new period of quiescence, called *metestrus* in the monestrous type and *diestrus* in the polyestrous types, follows. Under certain conditions, the estrous cycle is prolonged because of persistence of the corpus luteum, into a period of *pseudopregnancy* in which many of the changes of pregnancy develop in the genital tract and breasts in spite of the absence of fetus and placenta.

The anthropoid species show considerable variation from the lower types. In them a new phenomenon known as *menstruation* takes place. The uterine cycle in the human female, for instance, consists of a period of rest which likewise includes repair, a period of endometrial growth known as the interval, and a secretory period known as the progestational period (often erroneously named the premenstrual phase). (Fig. 12 A). If impregnation does not occur, the end of the cycle is marked by menstruation, that is bleeding from the mucous membrane of the uterus. As yet it has been impossible convincingly to correlate menstruation with the

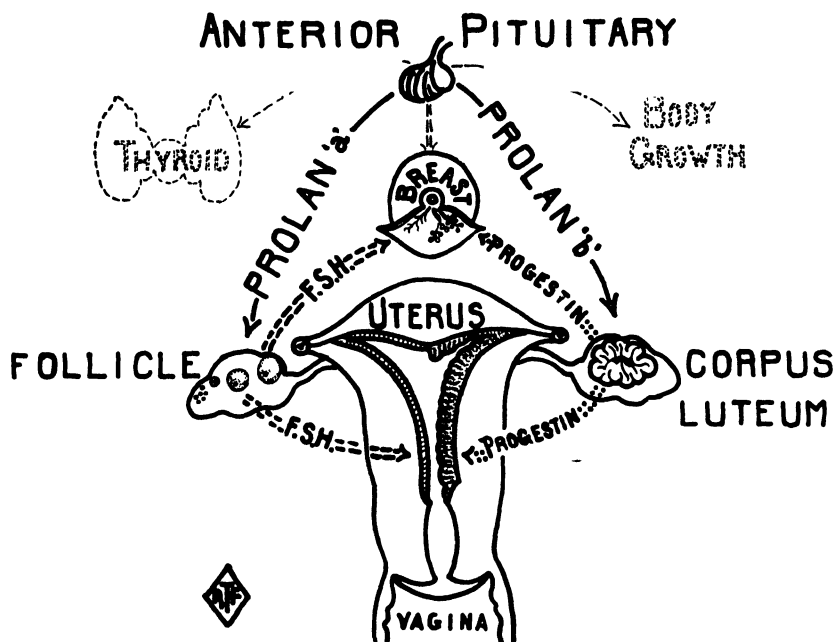


FIG. 1. SCHEMA SHOWING INTERACTION OF ANTERIOR PITUITARY AND OVARY

The anterior pituitary secretes gonadotropic hormone acting on the ovary with follicle production and corpus luteum formation. The follicle in turn produces female sex hormone; the corpus luteum, progesterin, both of which act on the uterus.

cycle of the lower forms. Estrus or heat in the lower mammals corresponds to the middle of the human cycle in so far that at this time ovulation takes place. Menstruation, on the other hand, occurs at a time corresponding to just before the beginning of anestrus or the quiescent period in the lower forms.

Sex Cycle in the Human Female:

Abortive Cycle. In order to understand the action of the sex hormones it is necessary to realize that intricate interaction exists between numerous glands and organs. Considerable evidence already has accumulated which shows that in the female the pituitary gland or adenohypophysis undergoes cyclical changes⁹¹ and that during this prepituitary cycle, quantitatively varying amounts of hormone are elaborated and act up on the ovary.⁴⁷ This gonadotropic (or ovary stimulating) hormone initiates growth of the primordial ovarian follicles, enabling them to mature. The lining cells of the ovarian

follicle, as well as the follicle fluid which accumulates during follicle growth, contain an estrogenic factor which has been demonstrated in the circulating blood and which through this fluid medium reaches the uterus and there acts especially upon the uterine lining or endometrium. The endometrium begins to show signs of activity. Its glands increase in length and tortuosity. Their lining epithelium likewise show growth phenomena and the connective tissue surrounding the glands changes in character becoming succulent and less stain absorbing (decidual change).

If the graafian follicles (that is follicles which already show a cavity) have reached a certain size, they protrude beyond the general surface of the ovary and usually every month, one ruptures. The ovum is extruded into the free peritoneal cavity or into the adjacent opening of the fallopian tube. The further fate of the ovum depends upon the presence of active spermatozoa, one

of which may or may not succeed in penetrating the outer layer of the ovum and thus impregnate it.

Immediately after rupture of the follicle, the *stoma* (rent) in its capsule closes, the lining cells remaining in the follicle proliferate and begin to secrete or absorb increasing amounts of lipoid. The entire follicle cavity is vascularized by the penetration of capillaries and thus a new organ, the corpus luteum or yellow body is elaborated in a surprisingly short time. (Fig. 13.) The cells of this yellow body actively secrete not only the female sex hormone or estrogenic factor, but also the progestational hormone "progesterin" which is essential for nidation. Both of these hormones circulate in the blood stream, in turn reaching the mucous membrane of the uterus already activated by such quantities of estrogenic factor as previously have been elaborated by the graafian follicle. (Fig. 1.)

In consequence of these additional hormonal stimuli, further growth changes occur in the endometrium, producing the full progestational reaction which is essential for the nidation of the ovum (that is, successful implantation of the fertilized ovum). Should, as so often happens, particularly in the human female, impregnation not have taken place, the corpus luteum regresses (the cause of this regression is unknown) and its hormone production gradually diminishes. In consequence of this withdrawal of stimulation, involutionary changes take place in the lining of the uterus. In the lower forms, this endometrial regression shows itself in rapid return to the resting stage. In the anthropoid group in which the progestational changes are most marked, the regressive changes are more abrupt and greater, in many instances a disintegration of the superficial layers of the endometrium supervening. This stage is regularly accompanied by a more or less marked oozing through this resulting wound or through the substance of the seemingly intact mucosa. The blood at first collects in

the cavity of the uterus and then finds its way through the cervical canal into the vagina—the bloody menstrual flow. (Fig. 15.) After the exfoliation and bleeding have terminated, a rapid regeneration of the endometrium ensues. This regeneration coincides with the early part of the next cycle, namely the beginning of the period of rest. Restoration occupies at most 1 to 2 days.

Fertile Cycle. On the other hand, if the ovum has been impregnated, the dividing ovum, usually in the gastrula stage, reaches the progestationally prepared uterus within the course of 3 or 4 days after ovulation and by the 5th day enters the substance of the progestationally changed endometrium, a period which is known as the onset of nidation. Certainly in the lower forms, and probably also in the human female, removal of the corpus luteum at this stage causes a lack of the progestational nidatory hormone, progesterin, with consequent involution of the endometrium. Then either failure of implantation of the fertilized egg, or, if already implanted, an early abortion supervenes.

If the impregnated ovum has successfully taken root in the progestationally altered endometrial lining, a new factor requires consideration, namely the chorion epithelium or outer layer of the ovum which at a later stage will form the placenta. The chorion epithelium and its successor, the placenta, represent a very potent though temporary gland of internal secretion (Halban⁵⁵) which, it has been found, elaborates not only a hormone similar to that of the prepituitary, but likewise the estrogenic factor and probably the progestational factor as well. During pregnancy marked changes in the cells of the prepituitary also are noted.

From this extremely brief summary, the complexity of the sexual processes in the female becomes apparent. Simultaneously a prepituitary, an ovarian and a uterine cycle take place. The correlation between these cycles is maintained by the blood stream, because through this fluid medium the hor-

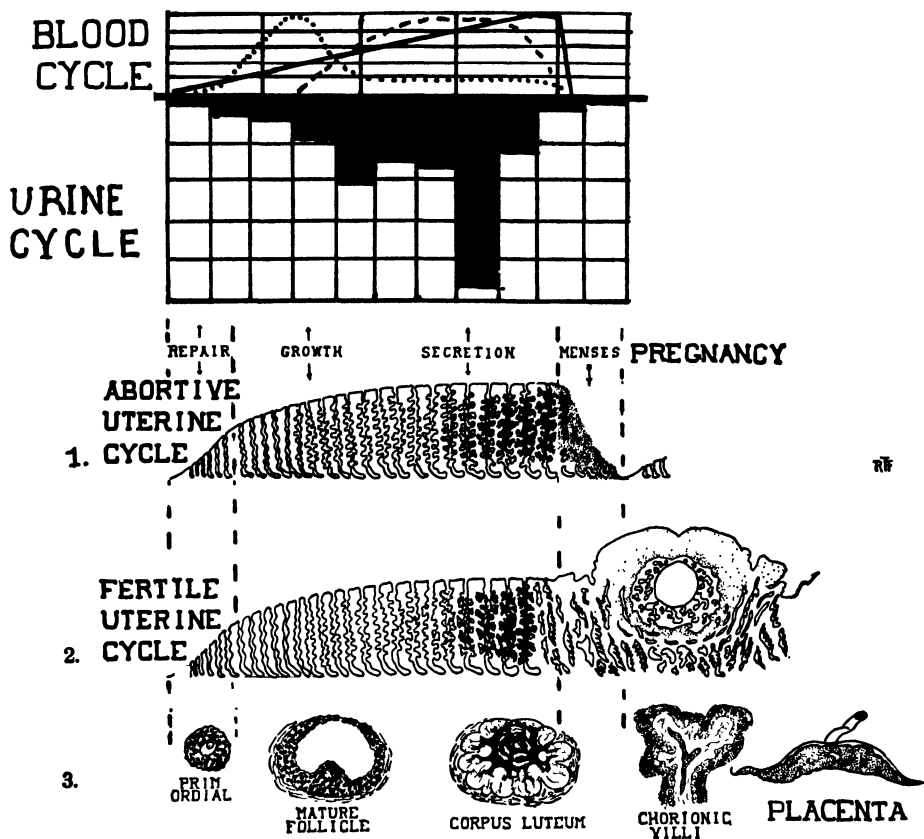


FIG. 16. COMPOSITE SYNCHRONISED DIAGRAM SHOWING BLOOD, EXCRETORY, UTERINE AND OVARIAN CYCLES

Blood Cycle—Solid line, concentration of female sex hormone; dotted line of anterior pituitary, and broken line supposed progesterin concentration. Urine Cycle—Total excretion of female sex hormone in mouse units for each three days. 1. Abortive (menstrual) changes in uterine mucosa. 2. Fertile (pregnancy) changes in uterine mucosa. 3. Ovarian cycle—in pregnancy, placental cycle continues and accentuates the ovarian cycle. (1 and 2 modified from Schroeder.)

mones are transported from their source of origin to the site of their activity (the "Erfolgsorgane," end organs). (See Fig. 16.) The description of the various hormones which now follows will not be according to the chronology of their discovery, but according to their physiological importance and order of activity.

I. Prepituitary and Prepituitary-Like Hormones (Gonadotropic Factors)

The pituitary gland or hypophysis cerebri lies within a bony capsule, the sella turcica, well sheltered and protected at the base of the brain. (Fig. 2.)

It is connected by a narrow stalk with the mid-brain. (Fig. 3.) The gland may be divided into an anterior lobe (adenohypophysis), an intermediate portion (pars intermedia), and a posterior lobe which is not epithelial in structure (pars posterior sive nervosa). (Fig. 4.)

In this connection only the anterior lobe (adenohypophysis or prepituitary) interests us, as this appears to be the sole source of the true gonadotropic hormone.

The glandular epithelium contains eosinophilic and basophilic cells as well as cells which do not accept cytoplasmic

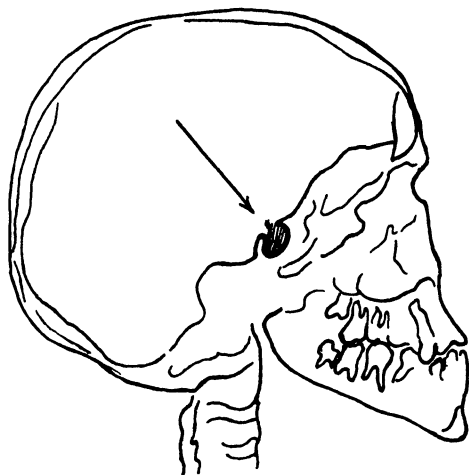


FIG. 2. OUTLINE OF ROENTGENOGRAM OF NORMAL SKULL

This shows well protected site of sella turcica. Arrow points towards sella and pituitary gland.

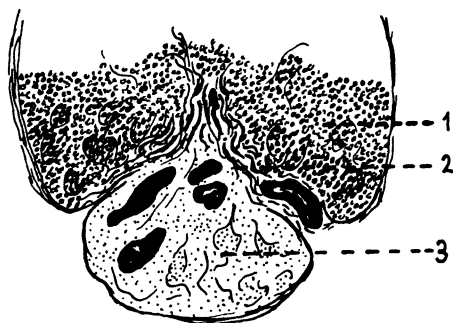


FIG. 4. HORIZONTAL SECTION THROUGH PART OF PITUITARY GLAND (Magnification x6)

1. Right portion of anterior lobe showing the secreting cells. 2. Pars intermedia. 3. Posterior nervous lobe. The black areas are colloidal pseudocystic accumulations of secretion.

stains and are therefore called chromophobe.

The chorion epithelium and the fully formed placenta have likewise been found to be a source of a gonadotropic hormone (Zondek⁹²). This hormone differs from that obtained from the pituitary itself only in that its action upon the ovary is incomplete in the *hypophysectomized animal*, but in animals possessing even small portions of a pituitary, this pituitary-like hormone proves potent (P. E. Smith⁶⁹).

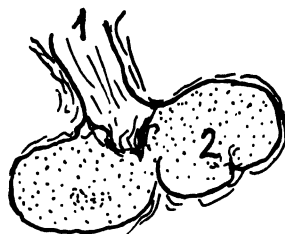


FIG. 3. SECTION THROUGH PITUITARY GLAND AND STALK (Magnification x3)

1. Shows stalk connecting the gland with the base of the brain. 2. Shows anterior lobe of pituitary in transverse section.

Gonadotropic hormone is found in small amount in the blood (Frank⁴⁷) and urine (Zondek⁹²) of non-pregnant females; in large amount in that of pregnant women, and also in the blood and urine of castrated or post climacteric females (Zondek⁹²).

Source of the Hormone. By means of both acid and alkaline extraction of fresh pituitary glands of practically every species so far examined, a gonadotropic factor can be concentrated. These extracts, however, are extremely impure and carry along with them numerous other factors elaborated by the pituitary, such as the general growth hormone, as well as stimulators of the thyroid (thyrotropic hormone), adrenal (adrenotropic hormone), pancreas (pancreatotropic hormone) etc. Further purification has proved incomplete. The growth hormone, however, can be separated from the gonadotropic factor to a considerable degree.

By means of precipitation methods, the prepituitary-like hormone can be concentrated, particularly from the urine of pregnant females.

Chemical and Physical Characteristics of the Prepituitary Hormone. The prepituitary hormones are insoluble in

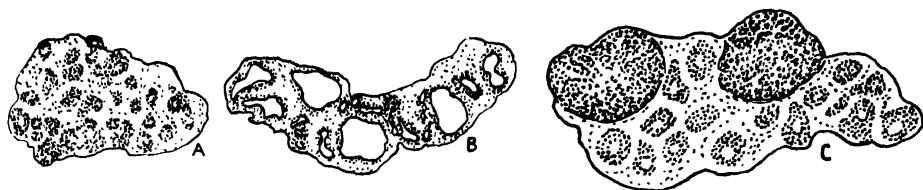


FIG. 5. LOW POWER SECTIONS OF IMMATURE MICE OVARIES

A. Normal immature control showing many primordial and small graafian follicles. B. Reaction I produced by gonadotropic hormone. Large cystic follicles. C. Reaction III as in pregnancy test. Above, 2 large corpora lutea are seen. Below many growing follicles. (A and B from Frank, Goldberger and Spielman, J. A. M. A. Aug. 11, 1934, Vol. 103, pp. 393-402.)

alcohol, acetone and other lipid solvents. In their most purified form they are obtained as a white, odorless powder, readily soluble in very dilute alkali, extremely heat sensitive; their activity being lost by heating to 50° C. for 10 minutes. Little further is known of their characteristics and nothing of their chemical constitution.

From fresh gland tissue which retains its potency for 2 or more years if preserved at -7° C., a dry powder is obtained by dessication with acetone. The gonadotropic factor may be extracted with aqueous alkali, acid or pyridine. This fraction also contains the thyrotropic and adrenotropic fractions, which Fevold,⁵⁶ Collip and others⁵⁷ have been able to concentrate further. Separation of general growth hormone and gonadotropic fractions is still incomplete.

The gonadotropic-like factor extracted from pregnancy urine shows only slightly different chemical reactions from true gland extracts.

The hormones may be polypeptides, of small molecular weight, as they dialyze readily (Girard⁵³). They are water soluble, precipitated by alcohol, benzoic and phosphotungstic acid.

Test for the Prepituitary Hormone.

Bio-assay is performed by injecting the substance to be tested in varying amounts into immature female rats which are more sensitive than mice. The extract is best injected twice daily for 48 hours, the animal killed after the elapse of 100 hours from the first injection, and the ovaries inspected and later sectioned and examined. If the extract

has sufficient potency to produce a reaction in the test rat, the ovaries will show one of the following three types of changes:

REACTION I, which can only be determined by microscopical examination. Instead of containing only a few follicles in the earlier stages of maturation and innumerable primordial follicles, the ovary is honeycombed by a large number of cystic graafian follicles. This signifies the presence of the anterior pituitary hormone or anterior pituitary-like hormone. Some investigators are convinced that this reaction is due to a special follicle stimulating factor which Zondek called Prolan A. (Fig. 5 B.)

REACTION II. On gross inspection the ovaries on the surface will show from one to five bright red to purplish black, elevated blood spots. This reaction signifies the presence of pregnancy. It is due to early lutein changes and hemorrhage into large unruptured follicles.

REACTION III. No evident microscopic change in the ovary may be apparent on gross inspection, but, on sectioning, one or more corpora lutea are found. This reaction likewise signifies pregnancy. (Fig. 5 C.)

In addition, diffuse luteinization of the ovarian connective tissue and theca externa of follicles may be found with all three reactions.

The smallest amount of extract which produces one of the above changes in the ovary of the test rat is called a *rat unit*. Similarly, if an immature mouse or immature rabbit is

used, a mouse or rabbit unit can be determined.

The rabbit is extremely sensitive to the prepituitary hormones, its ovaries react in half the time (48 instead of 100 hours), but because of the additional expense entailed in its purchases and upkeep, this animal rarely is used except for pregnancy tests.

Various investigators have regarded the opening of the vagina in the immature rat or mouse as a test of prepituitary activity. This appears to me fallacious, as I have observed the vagina to open in cases where no ovarian reaction is found and vice versa. The increase in weight of the ovary, likewise, should not be regarded as a decisive test. Other investigators lay stress upon theca luteinization following injection; this signifies lutein hyperplasia of the cells surrounding the ovum. These and other variations found in the ovary appear to me as yet too uncertain to be employed in the differential analysis of prepituitary fractions.

Nomenclature. Various names have been given to the gonadotropic hormones. In Europe, Zondek's nomenclature of Prolan is generally accepted. He has gone further and divided the Prolans into Prolan "A" which is the fraction producing follicle growth; and Prolan "B," the fraction which stimulates luteinization, either in the form of intrafollicular and extrafollicular luteinization, or in the actual formation of corpora lutea. However, as yet, neither Zondek nor other workers have been able to separate these two fractions in an absolutely convincing fashion.

In this country, two of the large pharmaceutical houses have produced gonadotropic hormone which is obtained from the urine of pregnancy, under the trade names of *Follutein S* and *Antuitrin S*. These names are used by clinicians. The actual prepituitary hormone derived from the hypophysis has never been manufactured in sufficient quantity to be generally avail-

able and is too expensive to be obtained except in small amounts for experimental purposes. The name of Hebin has been suggested for it.

Until further advance has been made, it appears preferable to speak of the gonadotropic factor of the prepituitary gland and the prepituitary-like factor of blood and urine. In addition, a predominantly follicle stimulating and a predominantly luteinizing fraction is perhaps present in each.

Physiology of the Prepituitary Hormones. In this country the pioneers, in working out the physiology of the action of the prepituitary, have been Philip E. Smith and Engle,⁸⁵ and Herbert M. Evans.³⁰ In Europe, Bernard Zondek⁸⁴ almost simultaneously and independently, has done the most outstanding work. Many others since have made valuable contributions.

PUBERTY is ushered in by a sudden increase in secretion of the pituitary gland. As the hormone enters the circulation, the ovaries are stimulated, follicles mature, ovulation takes place, and the corpus luteum forms. The cause of this onset of increased prepituitary activity between the ages of 10 and 15 in the normal human female is unknown. Evans' hypothesis that the gonadotropic factor can only work after the pituitary growth factor has produced a certain stage of development is interesting but not fully substantiated. However, it has been found that in the rat, for example, ovaries of animals less than 20 days old do not respond to stimulation which in older animals proves adequate (Collip²¹).

CYCLE. The careful cytological studies of Wolfe⁹¹ and his group, in which changes in the cellular composition of the prepituitary have been controlled by differential cell counts, afford some evidence that a determinable cycle occurs in the prepituitary gland. This manifests itself in differences in the relative proportions of eosinophile, basophile, and chromophobe cells as well as in the staining qualities of the cells. More direct proof of a cycle has

been offered by our studies⁴⁷ in which a cyclical increase of the prepituitary or prepituitary-like hormone in the blood stream has been demonstrated by means of frequently obtained and assayed blood specimens. We have found that the greatest blood concentration is reached about the 10th day of the cycle (always taking the first day of the preceding menstruation as the beginning). (Figs. 8 and 16.)

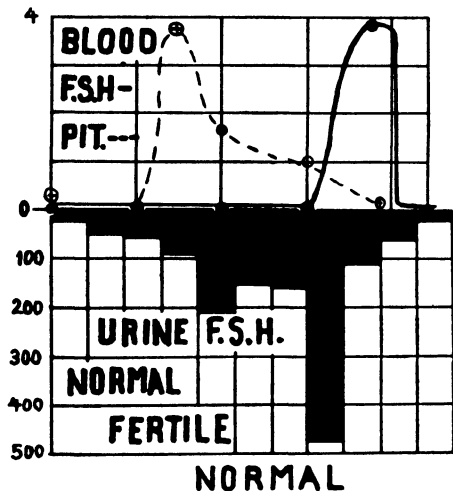


FIG. 8. HORMONE GRAPH OF NORMAL FERTILE CYCLE IN HUMAN FEMALE

Above base line (0) blood is shown. Below base line urinary excretion. Broken line and circles show prepituitary concentration in the blood. Unbroken line and black dots show female sex hormone concentration in the blood. Below base line urinary excretion of female sex hormone in black, showing total amounts in mouse units for every three days. Note 2 periods of increased excretion, the one shortly after ovulation, the other 5 days before menstruation.

However, throughout the cycle, a small amount of prepituitary hormones is found in the blood. It appears logical that at the time of greatest concentration, the ovary is most powerfully stimulated and thus ovulation is induced, followed under normal conditions by corpus luteum formation.

PREGNANCY. If pregnancy and successful nidation supervene, an immediate and huge increase of prepituitary or prepituitary-like hormone is apparent in the blood as well as in the urine.

This increase is quantitatively so great that upon it are based the Aschheim-Zondek and the Friedman tests for pregnancy.

In the normal, adult, cyclical, human female approximately 25 R.U.L. (Rat Units per Liter) of prepituitary-like hormone circulate in the blood at about the 10th day (Reaction I). Only small amounts are excreted in the urine (at most 20 R.U.L.) and this induces merely Reaction I in the test animal (*vide ante*). Recently (in press) we have demonstrated Reaction III also, in the non-pregnant female (both in the blood and urine) as well as after the onset of the menopause.

Within a few days after impregnation (3 days after the anticipated period has failed to appear) the titer is greatly changed. The blood may now contain from 1000–20,000 R.U.L., the urine 1000–5000 R.U.L., both giving Reaction II and III. Toward the end of pregnancy the blood and urine may contain as much as 40,000 R.U.L.

During pregnancy the prepituitary gland shows marked changes, particularly an increase of the chromophobic or colorless type of cells.

The effort of various investigators to base conclusions upon the amount of gonadotropic hormone which can be extracted from the gland at different portions of the cycle or during pregnancy appear to me unwarranted, because the amount of hormone stored in a gland is in no way an exact index of its functional activity at a given time. In some glands, as in the thyroid, storage takes place; in other glands, the hormone may be elaborated and excreted as fast as it is prepared. These differences make it impossible to gauge the activity by the amount left in the gland. Large quantities might be sent into circulation as fast as manufactured; partial storage might occur or, due to local vascular conditions, complete storage might result.

A most valuable contribution to clinical diagnosis was made by Aschheim and Zondek in their pregnancy test.

The ASCHHEIM-ZONDEK TEST⁹ is based upon the early and stupendous increase in prepituitary-like factor at the onset of pregnancy. The urine is injected subcutaneously in divided amounts (total 2.5–3 cc.) into immature mice (5 animals). After 100 hours the ovaries are examined. The presence of minute blood spots signifies pregnancy. Friedman⁴⁹ utilized rabbits in which blood spots appear in 48 hours after the intravenous injection of pregnancy urine. (Fig. 6.)

EFFECT OF GONADS UPON THE PITUITARY. The already complicated cyclical conditions are further beclouded by the



FIG. 6. FRIEDMAN PREG-

1. Ovary of normal, immature rabbit, negative pregnancy result.
2. Two large blood spots, positive for pregnancy.

fact that the ovary and testis in their turn exert an influence upon the prepituitary. Castration in both male and female produces well-marked pituitary changes. Injection of the estrogenic factor for prolonged periods likewise reacts upon the pituitary. Because of these findings, certain investigators believe that the pituitary activation when initiated is periodically arrested when larger quantities of estrogenic substance are liberated into the blood stream, reaching the pituitary through the circulation and there gradually arresting pituitary activity, until the absence of pituitary secretion in turn reduces ovarian activity. This hypothesis as yet has not been confirmed by incontrovertible proof, but at least gives us an insight into a possible self-regulatory mechanism.

EXPERIMENTAL EVIDENCE. Pituitarized laboratory animals show certain deficiency effects among which arrest of

the cycle, or if performed on immature animals, failure of full development of the sex organs, failure of opening of the vagina in rodents and absence of cycle are the most striking. These effects of pituitary ablation can be completely overcome by means of injection of potent extracts obtained from the prepituitary; likewise by a combination of prepituitary-like extracts (obtained from the urine of pregnant women) to which a minute and by itself inert, because insufficient, quantity of true prepituitary extract has been added. (Evans³¹ synergism, Fevold³⁷ augmentation.)

If prepituitary (glandular) or prepituitary-like (source, pregnancy blood or urine) extracts are injected into immature rodents, the ovaries are stimulated and at least one cycle can be initiated. This manifests itself in ripening of follicles, ovulation and corpus luteum formation in the ovary with consequent changes in the rest of the genital apparatus, including the breasts. By a similar experiment not only ovulation but also supra-ovulation can be induced in pregnant animals which, normally, do not ovulate during pregnancy (Smith⁸⁵). Experimentally the number of fertilizable ova can thus be increased excessively.

Although clinicians have attempted to employ the prepituitary-like hormones which are available under the names of Prolan, Follutein S and Antuitrin S, no convincing therapeutic effects have so far been recorded if examined by criteria such as are employed in animal experimentation. As has happened before potent extracts were available, credulous clinicians have ascribed striking and often marvelous results to such therapy, explainable however by the many self-limited diseases and co-incidental happenings noted without therapy.

Diseases of the Pituitary Gland Affecting the Female Sex Organs. Clinical evidence of the regulatory power of the hypophysis on the genital tract is noted in the human female.

OVERFUNCTION of the prepituitary as it occurs in acromegaly and basophilic adenoma (Cushing²⁵) may produce undue ovarian stimulation (excessive uterine bleeding—menorrhagia, metrorrhagia—enlargement of the uterus). In the later stages of these diseases, when the prepituitary cells are more seriously damaged, signs of oversecretion usually disappear, and are replaced by evidence of diminished function.

UNDERFUNCTION, as seen in Simmond's disease (atrophy of the prepituitary), cysts with compression of the glandular tissue, or destruction by carcinoma, causes diminution of the hormonal secretion. This results in failure of ovarian follicular growth and cessation of the menstrual cycle (amenorrhea).⁴²

"Ovarian" Hormones

II. The Female Sex Hormone (Estrogenic Factor)

The female sex hormone is found universally distributed throughout the plant and animal kingdoms. It has been obtained from yeast, plants, leaves, flowers, seedlings, etc., of all plants examined (Loewe⁷²), and throughout the vertebrate species, including the entire mammalian series. Because of its universal distribution, I still consider that the name of the "female sex hormone" is fully justified especially as the gonadotropic prepituitary hormone acts equally on both male and female, and that the corpus luteum or nidatory hormone is found only when mammals are reached, the yellow body not developing in the lower forms. As far as we can judge at present, the secondary sex characters likewise depend upon the agency of the female sex hormone though additionally influenced by the adrenal glands.

In the unicellular organisms it is impossible to determine in which portion of the cell the female sex hormone is elaborated. As we advance in the scale, the hormone localizes and is found in greatest concentration in the ovaries and seedlings of plants. In the lower

vertebrates, such as fishes, it is obtained mainly from the ovary (Fellner³⁴). In mammals it is found in the ovary, the placenta, and can likewise be recovered in the blood.

Sources of the Hormone. For commercial purposes the female sex hormone is now generally obtained from the urine of pregnant mares. A mare in the later months of pregnancy excretes as much as 400,000 M.U. (Mouse Units) of the hormone a day. Consequently a single pregnant animal is sufficient to supply a large pharmaceutical house with sufficient raw material. By lipid extraction of the urine, a concentrate for further purification becomes available. As will be shown later, the estrogenic factor can now be prepared in crystalline form; both its formula and its structure have been determined.

To avoid confusion, no attempt will be made to recount the chronology in the discovery of the pure hormone. Doisy,²⁷ in August, 1929, first reported the pure crystalline hormone. Shortly thereafter, October, 1929, Butenandt¹⁵ independently announced his results. In rapid succession, others likewise isolated the crystals. In 1932 Marrian⁷⁵ obtained a pure hydrate of the hormone from pregnancy urine.

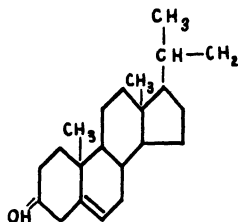
The clearest description of the chemistry is given by Butenandt¹⁶ and his reports as well as those of Girard⁵³ will be followed in the main, without desiring to detract from the meritorious work of others, especially the earlier investigators such as Iscovesco,^{63, 64} Herrmann,⁶⁰ Giesy,⁵² etc., who, though hampered by lack of an accurate method of assay, and not knowing of pregnancy urine as a possible source, developed the very methods which later led to success.

Chemistry

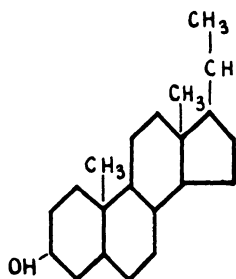
Brief Outline of the Preparation of the Pure Crystalline Hormone

A. The raw oil is obtained by lipid extraction of pregnancy urine (acetone or alcohol extraction).

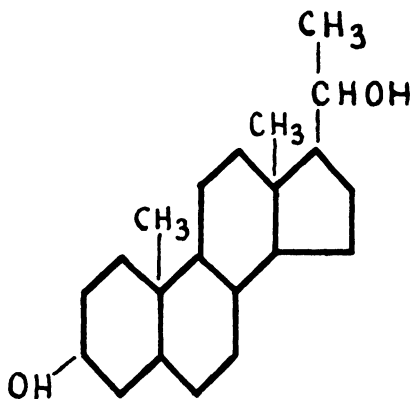
B. The crude oil is fractioned between 50 to 70 per cent ethyl alcohol and high boiling petroleum ether, as pointed out by Giesy in 1917.⁵² The potent fraction stays in the di-



CHOLESTEROL
In blood and tissues



LITHOCHOLIC ACID
A bile acid



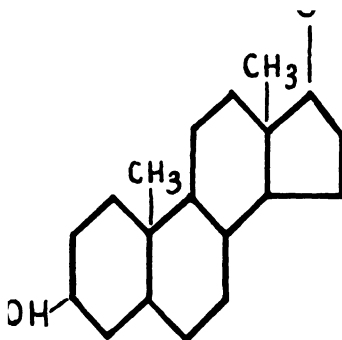
PREGNANDIOL PHYSIOLOGICALLY INERT
Found in human pregnancy urine

luted alcohol. Physiological effect of 200,000 M.U. per gram is obtained.

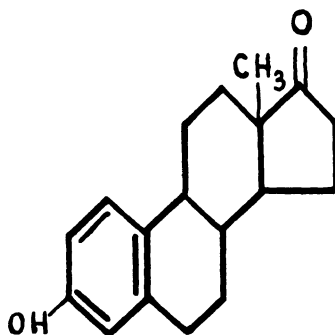
C. Separation between 60 per cent alcohol and benzol, the activity staying with the benzol fraction, 500,000 M.U. to 1 gram.

D. Dissolved in 60 per cent alcohol and washed with 2/N HCL, heated. Extraction with ether, the ether fraction extracted with alkali, acidified and ether extract obtained. 1,750,000 M.U. per gram.

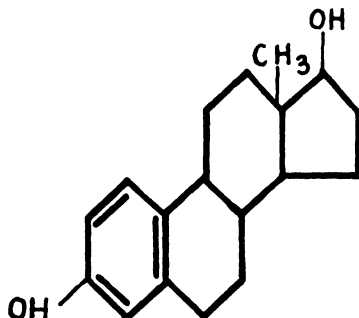
E. The residual oil distilled in high vacuum, crystals, gives off between 130° and 150°, which are recrystallized from acetone or alcohol, 8,000,000 to 10,000,000 M.U. per gram. Or if given in divided doses up to 40,000,000 M.U. per gram, i.e., 0.025 gamma = 1 M.U.



MALE SEX HORMONE
Found in testis, blood and urine

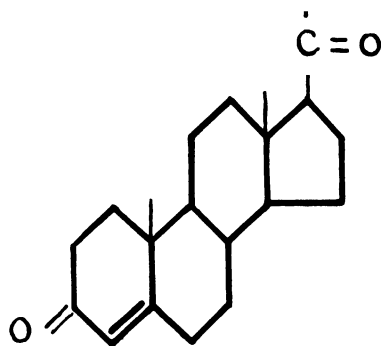


FEMALE SEX HORMONES
Found in follicle, corpus luteum
placenta, blood and urine of fe-
male $C_{18}H_{22}O_2$



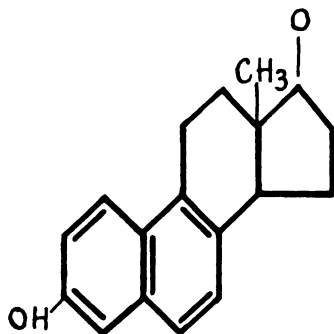
HYDRATE OF FEMALE SEX HORMONE
Found in placenta $C_{18}H_{24}O_3$

The substance thus obtained has been called a folliculine of Butenandt; Theelin of Doisy; Oestrin of Parkes and Marrian; Menformon of Laqueur. It has the formula of $C_{18}H_{22}O_2$;



PROGESTIN

Found in corpus luteum $C_{21}H_{30}O_2$



EQUILININE

Found in urine of pregnant mare

white crystals; melting point 225° (uncorrected).

$[\alpha]_D = +156$ to 158° , absorption spectrum in ultra violet, maximum 280 to 285 M.U.

This substance is an oxyketone.

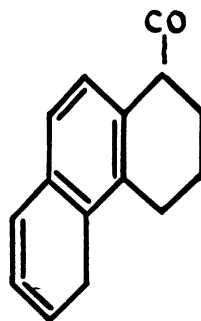
Benzoate and acetate have been formed by Butenandt; methyl ester and semi carbazon by Doisy. Physiologically, the benzoate has a slower and more prolonged action than the α folliculine and is somewhat stronger.

a folliculine (Butenandt).

The hydrate of folliculine, Marrian, (Theelol of Doisy) has the formula of $C_{18}H_{24}O_3$. It has no carbonyl group, but three hydroxyl groups. This substance is found in pregnancy urine and by removing a molecule of H_2O , a folliculine is obtained. It has a melting point of 279° to 280° (uncorrected).

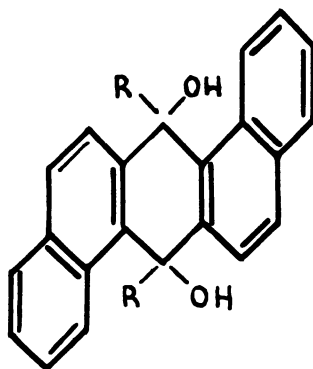
$[\alpha]_D = +30^\circ$. Its absorption spectrum in

the ultra violet is about the same as that of a folliculine—280 to 285 MU. Its activity is much less than that of the α folliculine, some 70,000 M.U. per gram with a protracted action. By driving off a molecule of water ($KHSO_4$ in high vacuo at 110° – 130°) its physiological activity is increased 60 times.⁷⁵ Solubility in water is 0.003 per cent.



HYDROPHENANTHRENE

A carcinogenic substance 100
mgm = 1 R.U. estrogenic



DIBENZANTHRACENE DIOLS

A carcinogenic substance 1
mgm = 1 R.U. estrogenic

According to Butenandt,¹⁷ Emmenin, which Collip²² obtains from the placenta and which Collip titers on immature rats as if it were a gonadotropic hormone, is identical with the hydrate of Marrian.

Butenandt describes an isomer of a folliculine which he calls β folliculine. It is physiologically weaker than the α and has a melting point of 257° uncorrected; $[\alpha]_D = +165$ to 166° ; has the same ultra-violet spectrum as the α . It is much less soluble in alcohol and chloroform.

The physical characters of a folliculine have already been partly described. It forms rhombic, leaf-like crystals or flake-like, branched, white, pearly crystals. The corrected melting

point according to Butenandt lies between 250 and 251° C.; according to Doisy, 243.5°, uncorrected; Laqueur, 240°, uncorrected. Solubility great in alcohol, acetone, chloroform and benzol; less in ether; very slight in petroleum ether; water solubility extremely small, 0.0015 per cent (Butenandt); in neutral solution approximately only 150 M.U. dissolving in .1 cc. of water. This however is judged of use in therapeutic application. Kober has found a characteristic color reaction for the hormone. This has been further improved by Marrian²⁰ but the test is as yet extremely involved and complicated.

Tests for the Female Sex Hormone (Estrogenic Factor)

The only test now current for the bio-assay of the estrogenic factor is the Allen and Doisy test, published by them in 1923.³ It is based upon the application of the changes in the vaginal epithelium of rodents, previously known (Stockard and Papanicolaou⁸⁶) which occurs during the estrous cycle. Although these changes are noted not only in mice and rats, but in guinea pigs and rabbits as well, only the former two are utilized in performing the test. In Europe the mouse test is most commonly employed; in this country, rats are more frequently utilized.

Adult rats are castrated, care being taken to remove not only the ovary itself, but the adjacent peritoneal fold forming the bursa ovarica as, without this precaution, regeneration of ovarian tissue may occur. After two weeks

have elapsed, the vaginal spread is found to contain merely leucocytes. The substance to be tested is injected in six aliquot doses subcutaneously into the test animal, over a period of 48 hours. From then on vaginal spreads are examined twice daily for three days.

If the amount of substance to be assayed contains at least 1 R.U. (Rat Unit), that is the minimum quantity necessary to produce an estrous reaction in the castrated rat, the vaginal smears will gradually change from pure leucocytes to small, nucleated, epithelial cells with progressive diminution of leucocytes (=2, negative), to small, nucleated cells (=3, faint positive) and finally to large non-nucleated squamous epithelial scales (=4, full positive), the latter signifying at least one complete R.U. If considerably more than a R.U. has been injected, the +4 stage will continue for several days. (Fig. 7.)

α folliculine (Theelin) injected in sufficient dosage, will give a +4 reaction within 48 hours after the last material has been injected. Folliculine hydrate (Theclol) will not give a positive reaction until 72 or 96 hours have elapsed but the positive stage will continue over a longer period of time.

After the injections have been stopped, the vaginal spreads usually return to the leucocytic negative stage within 48 to 60 hours. The same rat



FIG. 7. TEST FOR FEMALE SEX HORMONE. ALLEN AND DOISY VAGINAL SPREAD TEST OF MOUSE

0=negative test. Vaginal spread of castrated mouse untreated, only leucocytes. 3=positive reaction. Spread shows nucleated flat cells, no leucocytes. 4=strong positive. Complete reaction. Spread shows squamous non-nucleated cells.

may be utilized repeatedly if a week or 10 days are allowed to elapse after the spread has become negative.

The mouse test is identical with the rat test in that adult, castrated mice are employed, the vaginal smears being almost identical in the two species. It requires approximately three M.U. to give one R.U. Because of the more delicate reactivity of the mouse, our blood and urine titrations have been performed on mice.

If accurate titration is aimed at, it is necessary to employ at a minimum 5 mice or 5 rats for each amount to be tested. A mouse or rat unit will be the smallest quantity which produces positive vaginal smears in 3 out of 5 animals. Some investigators employ a single injection of material instead of distributing the injections over two days, in their titration. Under these conditions, approximately one-third more of material is needed to produce a positive reaction.

All of the figures which follow are based on the Allen and Doisy test, given in divided dosage.

Previously to 1923, the sole test available was the effect of injection upon the uterus of the castrate rabbit (Fellner³²). Positive reactions were read by the increase in size and vascularity of the uterus as well as the changes in the mucous lining of this organ. This test required 4 days after injections were stopped, sacrifice of the test rabbit, and was less accurate than the Allen and Doisy reaction as no definite end point is obtained.

A number of other tests have been devised. These may be mentioned merely in passing. The effect of estrogenic substance on the excised uterus of the rat, suspended in a bath of Ringer's solution.⁴³ The castrate rat's uterus in vitro has a comparatively rapid contraction time. The uterus of the animal previously stimulated by injections of estrogenic material, on the other hand, has a slower contraction rate.

Another test consists in the changes in the chromophil content of the utero-

cervical ganglion of the mouse.¹¹ This test requires serial section of the lower uterine segment and special staining.

Recently attempts have been made to utilize the change in coloration ("wedding dress")⁸⁸ or the rapid growth of the ovipositer of certain types of fish following injection of estrogenic substances.⁶⁵

All of these tests, of which only a few have been mentioned, have been superseded by the vaginal spread method. The fish tests have not proved specific for estrogenic substances; yohimbin, for example, also producing reactions.

The result following injection of estrogenic substance is not localized to the vaginal spread, but uterine and breast changes simultaneously occur, which will be discussed under Physiology.

Nomenclature. The earlier investigators were unable to distinguish between the estrogenic and progestational hormones. They therefore called all of the active fractions corpus luteum hormone, although such active fractions were likewise obtained from the placenta.

The female sex hormone or estrogenic substance is usually called Theelin in the United States because this name has been accepted by the Council on Pharmacy of the American Medical Association. On the continent of Europe, in the Germanic nations, it is called Menformon and Progynon; in France, Folliculin; in England, Oestrin. Other names such as Feminin, Gynacin, Thelykinin, Tokokinin, etc., have been used.

Physiology of the Female Sex Hormone (Estrogenic Factor)

In study of the estrogenic factor, several periods of investigation are recognizable. The pioneers were gynecologists—Fraenkel,³⁸ Aschner,¹⁰ Fellner,³³ Herrmann,⁵⁹ Okinschitz,⁷⁸ Frank and Rosenbloom,⁴⁸ and Giesy⁵² who worked with crude extracts obtained from the corpus luteum and placenta. In spite of handicaps, Herrmann⁶⁰ suc-

ceeded in purifying the extract of placenta sufficiently to obtain a substance composed only of C H and O as early as 1915. During this same epoch, physiologists such as L. Loeb⁷⁰ and Ancel and Bouin⁸ were active. Purely morphologic studies were made by Meyer,⁷⁶ Schroeder,⁸⁰ Hitschmann and Adler.⁸²

The estrogenic factor, whatever its source, or chemical composition, whether derived from yeast, plants, the ovaries of fishes or mammals, obtained from the follicle fluid, corpus luteum, the placenta or the urine, produces identical effects varying only in strength and rapidity of action. Injected into castrated rodents, a gradual but rapid change is noted in the uterus, vagina, and breasts, which corresponds to the changes seen in the normal cycle, up to the point where the effects ascribable to progesterin would occur.

The estrogenic factor alone cannot produce changes beyond this stage. If immature castrates are used, breast changes are noted which likewise progress to the point seen in the normal cycle, until the special corpus luteum effect normally would appear. The changes show minor species variations strictly characteristic of the different animals that have been investigated. By using enormous dosage, similar changes can be induced in the castrated human female.

As an example, the change in the genital apparatus of the castrate mouse may be instanced. Before the injections are given, the vaginal epithelium is low, atrophic, and covered with a thin layer of squamous cells. The vaginal secretion contains leucocytes. As the estrogenic effect appears, the vaginal epithelium becomes multilayered, the intermediate layer in particular showing marked cellular activity, the squamous covering layer increases greatly in the number of cells and eventually the surface layer desquamates, thus changing the vaginal content into squamous, non-nucleated scales (Allen⁴).

The uterus which in the castrate or the immature mouse is a thin, thread-

like, pale organ, rapidly increases in diameter, its lumen is distended with fluid (this is characteristic in mouse and rat only), the endometrium and musculature both increase in thickness and the number of folds, and with them the glandular epithelium multiplies. The immature breasts which consist of a very small nipple and at most four or five main ducts with few branches all increase in size, the branches multiply, sub-branching appears, and the beginning of acinar buds can be noted. Beyond this stage the estrogenic stimulation cannot be forced.

In the castrated human female, analogous changes have been produced by large doses given over long periods of time. For example, Clauberg¹⁹ activated the uterus by 250,000 M.U. injected over the course of several weeks. The pale, thin, resting endometrium gradually increases in thickness, grows more vascular, shows the changes histologists have described, first as the resting stage and then of the interval, which are characterized by gradual multiplications of endometrial glands which become increasingly tortuous, show mitosis in the glandular epithelium, and an increasing succulence and distinctness of the endometrial stroma cells or cytogenic tissue.

In castrated anthropoids (the macacus rhesus) Allen,² by injection of the estrogenic factor alone, has not only succeeded in producing these estrogenic changes, but after withdrawal of the stimulation, noted that menstrual bleeding took place, thus demonstrating that the estrogenic factor, alone without progesterin, can produce uterine bleeding.

The hormonal mechanism in the human has been studied by means of blood and urine examination (Frank and Goldberger^{42, 46}). During the menstrual cycle in the human female, an increasing amount of female sex hormone is found in the circulating blood. The greatest concentration is reached immediately before menstruation, at which time the hormonal level then abruptly falls. Female sex hormone is

found in the menstrual flow in five or six times the concentration that it attains in the circulating blood.

An excretory cycle is also noted, particularly in the urine, although large quantities of the hormone also are excreted in the feces. During a month (28-30 days), the average, normal, fertile, mature woman excretes approximately 1500 M.U. of female sex hormone in the urine. The excretion is not even, two marked periods of acceleration being noted, the one corresponding approximately to the time of ovulation, the other preceding the onset of menstruation by three or four days. (Fig. 8.)

A large amount of estrogenic substance is manufactured by the chorion and placenta. In the early chorion (up to the eighth week), one-half of a gram of wet tissue contains one mouse unit. Very possibly the placenta contains more estrogenic activity in the form of a precursor of the hormone which does not lend itself to lipid extraction. From the fully formed human placenta, as much as 1000 M.U. can be obtained. But as previously mentioned, the amount of hormone found within a gland in no way indicates the amount secreted. This is fully evidenced by the fact that in the later months of pregnancy, the human female may excrete as much as 40,000 M.U. per liter of urine, although at no time can more than 100 M.U. per liter be found in the blood.

The full physiological significance of ovarian, blood, uterine and excretory cycles will be considered in more detail after the special corpus luteum nidatory hormone, progesterin, has been dealt with.

In the adult woman, female sex hormone is found not only in the follicle fluid, the corpus luteum, blood, feces, and urine, but also in the saliva, sweat and gallbladder bile.

After full attainment of the menopause, female sex hormone disappears from the blood and urine.

Female sex hormone is found in the

male. One kilogram of fresh testis tissue contains 30 M.U. It is found at times in the blood and regularly in the urine, according to Laqueur⁶⁸ who obtains from 100 to 200 M.U. per liter, an amount which I have never personally been able to verify. The female sex hormone, in great concentration, has a definitely antimasculine effect on the male gonads, noted particularly in the atrophy of the accessory sex organs such as the prostate and seminal vesicles (Herrmann and Stein⁶¹).

In the female, continued injections of large amounts of female sex hormone produce changes in the ovary, which usually are only transient in character.⁶⁷ Such injections likewise cause definite changes in the hypophysis or prepituitary. On the other hand, physiologists have noted no effect on the heart, respiration and blood pressure of experimental animals, nor have they been able to obtain general toxic symptoms.

Changes in the Estrogenic Factor in Disease. The activity of follicular

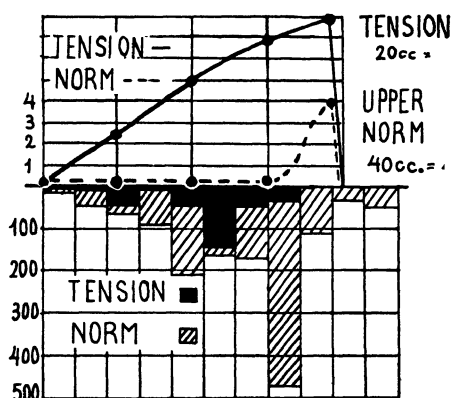


FIG. 9. HORMONE GRAPH OF PREMENSTRUAL TENSION WITHOUT EXCESSIVE BLEEDING

Above base line, blood; below, urinary excretion. Broken line shows female sex hormone concentration of normal woman. Continuous line shows excess concentration in a case of premenstrual tension.

Urinary excretion of female sex hormone. Shaded areas show amount excreted by normal females. Black areas show greatly diminished amount in case of premenstrual tension. High urinary threshold may account for increased blood concentration.

growth, ovulation and corpus luteum formation are directly influenced by the prepituitary hormones.

Hence in prepituitary disturbances, as previously mentioned, overfunction or underfunction of the genital tract may develop. Acromegaly, also basophile prepituitary adenoma in the early stages, usually cause genital overfunction. Later in these diseases, underfunction supervenes.

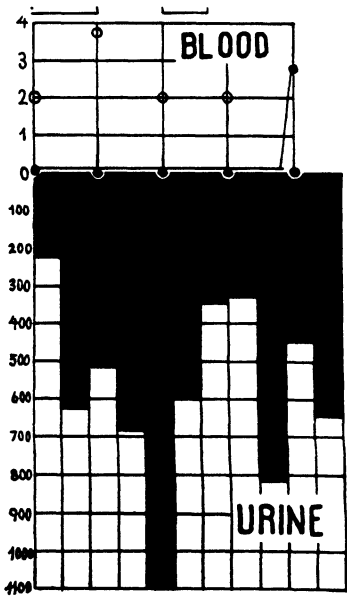


FIG. 10. GRAPH FROM A CASE OF MENORRHAGIA

The blood cycle is normal (circles show concentration of prepituitary hormone in blood. Black dots and solid line show concentration of female sex hormone in blood). Black below base line shows total excretion of female sex hormone in urine (for normal female see Fig. 8). Approximately 1500 M.U. are excreted each month by normal women. In this case, 6500 M.U. were excreted during the cycle.

In atrophy of the prepituitary (Simmond's disease, carcinoma, etc.), underfunction is noted.

Other glands of internal secretion—thyroid, adrenal cortex—produce overfunction at the onset of the trouble, followed by reduction of function at a

later stage. In addition to these, a far greater number of patients are seen in whom over- or underfunction of the genital tract appears without discoverable disease of any of the other endocrine organs. These form the group of so-called *ovarian functional* disturbances.

Overfunction in the majority of cases produces excessive menstrual bleeding. Our special blood and urine studies have proved this. Precocious puberty, in which menstruation occurs at an early age (3 months to 6 years)⁴¹ and premenstrual "tension" (in which psychic unrest predominates without excess of bleeding), likewise fall in this group.⁴⁰ (Fig. 9.) The blood may show no excess of estrogenic factor but a great excess regularly is excreted in the urine in functional menorrhagia and metrorrhagia. (Fig. 10.)

Underfunction manifests itself by absence of menstruation (amenorrhea) and sterility. In this group little estro-

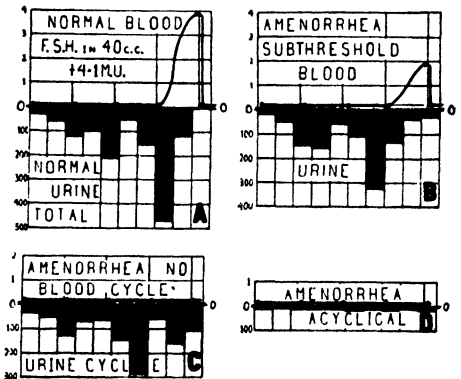


FIG. 11. OCCURRENCE OF ESTROGENIC SUBSTANCE IN THE BLOOD AND URINE OF NORMAL AND AMENORRHEIC WOMEN

A. Normal; B. Subthreshold; C. Negative blood cycle, positive urine cycle; D. Ayclical. (From R. T. Frank, J. A. M. A. 1934, 103:393.)

genic factor is found in the blood or urine. (Fig. 11.) Obesity is a frequent cause of ovarian underfunction; malnutrition and asthenia likewise cause amenorrhea.

In malformation of the genital organs, the sex of the individual may be

determined as *female* if blood and urine examination shows cyclical secretion and excretion of the estrogenic factor (Frank and Goldberger⁴⁵).

III. Corpus Luteum Hormone: Nidatory Factor: Progesterin

As previously mentioned, the earlier investigators concentrated their attention upon the corpus luteum ever since Prenant and Born-Fraenkel first drew attention to this gland. This work extended from 1898 to 1922. Of all the investigators who worked during this period, only Bucura¹⁴ drew attention to the fact that in a single, not repeated, experiment, in which merely a growing follicle existed in an ovarian rest, considerable uterine activity was noted, and from this finding surmised a possible potency of the follicle rather than of the corpus luteum.

In 1903 Fraenkel³⁸ showed that the corpus luteum was necessary for successful nidation and completion of pregnancy in the rabbit by demonstrating that destruction of the yellow body regularly produced abortion.

Leo Loeb,⁷⁰ in 1909, proved that the corpus luteum sensitized the uterine mucosa, thus enabling it to successfully harbor the impregnated ovum. He further clarified the mechanism of nidation by showing that the corpus luteum produced the maternal changes in the endometrium, needed to form the maternal portion of the placenta (maternal deciduoma or placentoma). He likewise demonstrated that the corpus luteum inhibits follicle ripening. The work of Bouin and Ancel¹² showed that the progestational glandular changes in the endometrium coincided with the flourishing state of the corpus luteum as did the gestational breast proliferation noted only in pregnancy and pseudopregnancy.

Not until Corner and Allen^{6, 24} succeeded in concentrating this nidatory factory (by obtaining a potent extract) was direct proof of these previously mentioned observations offered. They not only reproduced in castrates the

endometrial and breast changes due to progesterin (as they named their extract) but enabled rabbits, castrated immediately after conception—allowing sufficient time for the ova to enter the fallopian tubes—to carry to full term. These rabbits bore normal young when the necessary nidatory hormone was supplied by injection. Based upon their work, which was first published in 1929, the strides made have been prodigious, terminating in 1934 in the isolation of progesterin in crystalline form and the determination of its molecular structure.

Source of the Hormone. As yet the sole available source of progesterin is the corpus luteum itself. As a rule the corpora lutea of sows are employed. Because of the scarcity of this material, only small quantities are as yet to be had and necessarily are limited to experimental investigation, not only the scarcity but also the price proving prohibitive. Within the last year, small quantities of progesterin have been obtained from human and cattle placenta as well as from the urine of pregnancy, but in such minute amount, that these appear unlikely sources of future supply. As will be mentioned later, progesterin has been synthesized from stigmasterol, a plant oil, which eventually might prove an available source.

Chemistry of Progesterin. Crystalline progesterin was obtained simultaneously and independently during 1934 by Slotta, Ruschig and Fels;⁸³ Butenandt and Westphal;¹⁸ Allen and Wintersteiner;^{7, 90} and Hartman and Wettstein.⁵⁰ The substance has the formula $C_{21}H_{30}O_2$, a diketone, which appears in two forms of crystals, long needles and blunt, short prisms.

Butenandt and Schmidt succeeded in preparing progesterin by the oxidation of Pregnandiol, a physiologically inert substance found in the urine of normal pregnant women, and then removing the bromine, thus introducing a double bond.

Fernholz³⁵ synthesized it from Stigmasterol obtained from physostigma

venenosum. The soya bean likewise proves available.

The fresh corpora lutea of sows are extracted in 95 per cent ethyl alcohol to obtain a crude oil. The oil is dissolved in a greater dilution of alcohol (70% and later 35%) and at each stage extracted with low boiling petroleum ether. The progestational fraction follows the petroleum ether, the estrogenic fraction remains in the alcohol. By a final vacuum distillation, the most active crystalline fraction showing 1 Rabbit Unit per mg. is obtained.

Melting point 120° – 128° ; selective absorption in ultra-violet maximum at $204\text{ }\mu$.

The formula of progestin is $\text{C}_{21}\text{H}_{30}\text{O}_2$.

Test for Progestin. The Allen and Corner test⁵ for progestin is based upon the observation of Ancel and Bouin^{8,12} that the corpus luteum produces the endometrial glandular changes noted in pregnancy and pseudopregnancy.

On the other hand, an excess of female sex hormone inhibits the action of progestin. Ignorance of this fact proved the chief obstacle to the earlier investigators in obtaining a progestin reaction (Allen²⁴).

An adult, castrated rabbit is sensitized over 3 days with a daily dose of 10–15 R.U. of female sex hormone. Thereupon the substance to be examined for progestin is injected in divided doses over a period of 5 days. The next day the animal is sacrificed; the stained, microscopic cross sections of the uterus are examined. (Fig. 12.)

If the substance under investigation contained at least 1 Rabbit Unit (Rab. U.) of progestin, very characteristic changes are noted, consisting in marked increase in thickness of the endometrial layer, the gross folds of the uterine endometrium are increased in number, depth and branching, and a proliferation of the endometrial glands far beyond that obtainable by female sex hormone injections alone is observed.



FIG. 12. TEST FOR PROGESTIN

Microphotographs of transverse sections of castrated rabbit's uterus. A. Transverse section of uterus of untreated castrated rabbit. B. Transverse section of rabbit injected with female sex hormone. C. Transverse section of uterus of rabbit treated by female sex hormone, followed by progestin. Same magnification throughout.

The animal utilized is the rabbit, either castrated immediately after copulation, at which time, in this animal, ovulation takes place, or previously castrated rabbits which have been primed with female sex hormone, the estrogenic factor. Only if the uterus has been previously sensitized by means of the estrogenic factor, either physiologically or artificially, does progestin produce its pathogonomic uterine effect.

The smallest amount of substance producing a full change, is called a rabbit unit of progestin. (Fig. 12.)

Physiology of Progestin

The action of the estrogenic factor in the lower animals and in anthropoids was described in the previous section.

Continuing from the time of estrus and ovulation, the formation of the corpus luteum progresses rapidly in the

ruptured ovisac due to luteinization of the residual granulosa cells and the ingrowth of capillaries. This permits secretion of progesterin into the circulating blood by means of which medium it reaches the genital tract and breasts. (Fig. 13.)

with the uterus and is expelled (early abortion).

ABORTIVE CYCLE. After ovulation the corpus luteum develops and produces the uterine changes just enumerated. In all mammals below the anthropoids, after the secretory uterine stage has

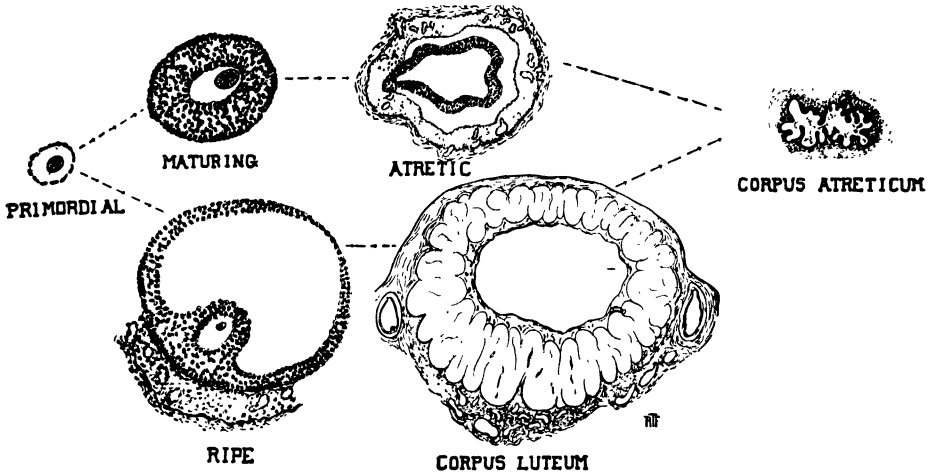


FIG. 13. LIFE HISTORY OF THE OVARIAN FOLLICLE

Starting with the primordial follicle, we have next the maturing follicle. Approximately only one out of 300 follicles fully ripens (as shown on lower line), ruptures, and forms a corpus luteum. The other 299 become atretic. The final stage of both the atretic follicle and the corpus luteum is the corpus atreticum, with eventual reabsorption of this scar into the stroma of the ovary. (From R. T. Frank, *The Female Sex Hormone* [1929].)

The uterine changes interest us most in this connection. There results an increase in the tortuosity of the endometrial glands, with profuse secretion by the epithelial cells—a secretion which later helps to form the “uterine milk” in some of the lower species in which no direct anatomical connection between maternal and fetal structures develops. (Fig. 14.)

Simultaneously the endometrial connective tissue (cytogenic) shows a decidual reaction, essential for embedding the fertilized ovum (L. Loeb⁷⁰). The connective tissue when thus sensitized responds to mechanical stimuli by marked proliferation—an activity essential for the formation of the maternal part of the placenta. If this reaction is interfered with, the ovum either fails to embed, or if it has already gained a foothold, it again loses its connection

been reached, the endometrial activation regresses to the anestrus phase if the ovum is not fertilized. This uterine regression corresponds chronologically to regression of the corpus luteum and is due to cessation of the secretion of progesterin. This regression can be produced artificially at any stage, by destruction or excision of the corpora lutea (Fraenkel;³⁸ L. Loeb⁷⁰).

How and why the fertilization and embedding of the ovum prolongs the activity and life of the corpus luteum remains a mystery. That it is not directly due to the ovum is clear, for in the rat, for example, the life of the corpus luteum can be prolonged in the non-pregnant animal by stimulation of the cervix (Long and Evans⁷³) or distension of the uterus with fluid (Selye⁸²). In the bitch pseudopregnancy (as this non-gestational extension

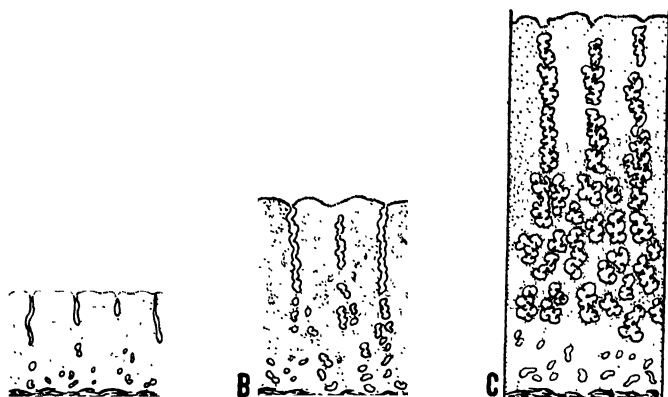


FIG. 14. SECTIONS OF HUMAN ENDOMETRIUM DURING CYCLE (to scale but diagrammatic)

A. Period of rest. Mucous membrane is thin, the glands straight and far apart. The connective tissue cellular (cytogenic). At the bottom the uterine muscle is indicated. B. Interval. The glands are more tortuous and run closer to each other. The mucous membrane has doubled in thickness. C. Progesterational or secretory phase. The mucosa can be divided into three layers. Nearest the cavity of the uterus (upper edge) is a pale area with the stroma showing decidual change (compact layer). Next comes the middle layer in which the convoluted glands are closely set (spongy layer). Below, bordering on the muscle, is the unchanged basilar layer. D. Menstrual mucosa toward end of menstruation. Only the lower portion of the basilar layer has remained intact. The remainder of the mucosa has exfoliated.

of the luteal cycle is termed) may likewise be induced or occur spontaneously. Similar prolongation of the luteal phase is observed in the cow ("dumb rut") and is well known to cattle breeders.

In the anthropoids, failure of impregnation and nidation produces more striking phenomena. In the human female, in whom it is most accentuated, withdrawal of progestin is followed by exfoliation of the superficial functional layers of the endometrium (compacta and spongiosa) leaving merely the denuded basal layer as a residual wound surface. (Fig. 15.) Simultaneously blood sickers through this wound and discharges through the cervical canal and vagina as the menstrual flow.

In some women no exfoliation of endometrium takes place, the blood sickening through the decidually changed but intact mucosa by diapedesis (Gebhard⁵⁰). (Fig. 15.)

If the follicle has not ruptured, ovulation does not occur and yet menstruation may follow (anovular menstruation). That withdrawal of the estrogenic factor alone may be followed

by a menstrual flow has been shown by Allen's experiments on the castrated rhesus monkey injected with theelin for 10 days. Cessation of injection was followed by typical bleeding. (Fig. 15.)

The so-called *anovular* menstruation of the human (Schroeder,⁵¹ Geist⁵²) may not be as simple as this, for in spite of no ovulation, the regressing



FIG. 15. VARIOUS TYPES OF HUMAN MENSTRUATION. Diagrammatic.

To the left is the residual basilar layer covered with fibrin and red blood cells (Schroeder type of menstruation). In the center is an unexfoliated mucosa in which the bleeding takes place by diapedesis and rhexis. The vascular extravasation lifts off the superficial epithelium and sickers into the uterine cavity. (Gebhard type.) To the right is a mucosa, seemingly at the period of rest. Nevertheless, by diapedesis and rhexis red blood cells reach the uterine cavity. (Corner type.)

follicle frequently shows theca lutein changes, very possibly associated with subthreshold progesterin secretion.

The endometrial denudation associated with menstruation undergoes regeneration and repair in the space of 24–48 hours corresponding to the beginning of the succeeding menstrual cycle.

FERTILE CYCLE. If, on the contrary, the ovum is fertilized in the fallopian tube or elsewhere (peritoneal cavity, ovary) and maintains a vascular connection with the maternal structures (irrespective as to whether this attachment is normal intrauterine, tubal or ovarian), the corpus luteum continues to develop and functions during pregnancy for a period characteristic for each species. In the rabbit with a gestation of 31–33 days, the corpus luteum is essential for at least 16–18 days; for the human with pregnancy of on the average 278 days, the corpus luteum is essential at the very most for the first 30 days.²⁰ When the dividing ovum reaches the cavity of the uterus, it enters the substance of the sensitized endometrial mucosa by lytic action (digesting the adjacent tissues). If the endometrium is unsensitized (no corpus luteum—no progesterin) this penetration cannot take place. The endometrium of the castrated, pregnant rabbits—castration performed within 2–3 hours after coitus—has been sensitized artificially and kept in this condition by Corner with progesterin injections, with resultant continuation of pregnancy to labor at term.⁶

In the further course of gestation in the human, the ovum penetrates into the layers of the endometrium and grows within the maternal tissues. Maternal blood vessels are opened by the outer embryonic layer, the fetal trophoblast, and a new organ develops, partly fetal, partly maternal—the placenta.

The Placenta. This temporary organ of exchange, the placenta, acts both as an intermediary for supply and excretion for the fetus during pregnancy.

In addition it has been shown to be

a *potent endocrine gland* (Halban,⁵⁵ Iscovesco,⁶⁴ Zondek,⁹² et al.). (Fig. 16.)

The placenta elaborates large amounts of both the prepituitary-like gonadotropic factor and estrogenic factor. Probably, too, it secretes progesterin as well (Tausk¹). This appears to be nature's supreme effort to assure continuation of species by reproduction—all the hormones essential for pregnancy being elaborated and secreted during gestation directly within the uterus, thus assuring temporary independence from the prepituitary and ovaries.

The local safety factor is great. It manifests itself in marked oversecretion, the excess of hormones circulating in the blood and when the threshold is reached, leaving the body through the kidneys and intestine.

Changes in the Progestational Factor in Disease. No such observations rest upon a factual basis. Clinically, surgical ablation of the corpus luteum, or ovary containing a yellow body during the secretory stage, is followed by menstrual bleeding 3–4 days later. Pregnancy has been known to continue after removal of the corpus luteum as early as the 14th day after conception (Essen Möller²⁹); usually abortion supervenes if the corpus luteum is removed before the 30th day.

To ascribe vomiting of pregnancy, toxemia or eclampsia to deficient corpus luteum secretion is purely supposititious.

A few tumors described as luteoma or luteo-carcinoma have given no endocrine symptoms. In cases of hydatid mole and chorionepithelioma the ovaries may form huge cystic tumors (lutein cysts).

Chemical Relations between Estrogenic and Progestational Hormones to Cholesterol and Carcinogenic Substances.

The work of Butenandt,¹⁰ Marrian,⁷⁴ Cook²³ and Girard⁵³ developed marvelous possibilities for further research. Bile acids and cholesterol, compounds normally found in the human organism,

are sterols. The estrogenic and progestational factors are closely related bodies of the same class, as is the male sex hormone. Some of the skin-cancer producing tars show estrogenic activity (Cook).

This complicated relationship can best be illustrated by showing the structure of the compounds in question.

Cholesterol and bile acids are normal constituents of the body in both male and female. Large amounts of female sex hormone are found stored (or produced) in the gallbladder bile of both sexes even before puberty and after the menopause. The close chemical relationship of these phenanthrene compounds offers intriguing possibilities for speculation.

It is readily conceivable that the body metabolism changes cholesterol and bile acids into male and female sex hormone and also into progesterin. Likewise that over or underproduction of hormone may be a general disturbance of body metabolism rather than due to a local change in testis or ovary. The hypothesis that closely related sterols of the carcinogenic group develop when the body no longer utilizes the physiological sterols, as after the menopause, also obtrudes itself, particularly as cancer is more frequent in the senium.

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R. T. F.

HOSTILITY, EROTIC. A state in which the apparent hatred of a woman for a man in reality masks sexual attraction.

Catullus (lxxxiii): "Lesbia says many bitter things to me in the presence of her husband. The dull mule, understanding nothing, chuckles with joy. If she were silent, it would be better for him. Her rage reveals that she cannot forget me. Her blood is burning for me, and that is why she talks against me."

HYMEN, MALE. Victor Robinson's term for the frenum preputii (q.v.), since this structure frequently ruptures and bleeds during the first intercourse.

HYPHEDONIA. A condition in which the individual experiences only faint pleasure from acts that normally give intense pleasure. In sexologic literature the term denotes relative frigidity.

HYPHIALTES (Greek formation).

A term employed by demonologists as the opposite of *ephialtes*, or incubus; thus, a succubus, "one who leaps under."

Bodin's *Demonomanie*.

ICELANDIC LITERATURE, SEX PROBLEMS IN. 1. Sex problems are not very prominent in Icelandic literature, Old or Modern, and this is especially true of the old genres known as *Edda* and *Saga*. "Es ist das keuscheste Schrifttum der Erde," says Andreas Heusler, one of the foremost authorities on Old Icelandic and Old Germanic literatures.

2. The Eddic poems represent the oldest portion of the Old Norse (Norwegian-Icelandic) literature; some of them may even antedate the colonisation of Iceland (874), while the latest are probably of the 12th century. They fall into two groups: the Mythical, dealing with myths and gods, and the Heroic, dealing with heroes of the migration period.

3. With the exception of *Skírnismál*, which tells how Freyr becomes despondent of love for the beautiful Gerðr and finally gets her through his intermediate, Skírnir, none of the mythical poems has central love themes. Nevertheless their attitude towards love is often revealed, sometimes directly, sometimes indirectly. According to the gnomic poem *Hávamál* women should be handled with care, for they are fickle and cannot be trusted. Whether you are serious or not in your advances, tact is always imperative. Beware of another man's woman and, above all, witches.

These seem eminently practical rules for Viking conduct. Contrasting with these heathen rules is the more Christian attitude of *Völuspá*, which predicts evil fate in life to come for him who entices another man's woman, and counts incest and great adultery among the signs foreboding the near end of this world. Almost Rabelaisian is the attitude of *Hárbarðsljóð* and *Lokasenna*, both of them quarrels or flytings, where the gods

now boast, now twit, each other of their love-affairs. Such is especially the case in the latter where Loki accuses gods and goddesses of adultery, incest between brother and sister, and unnatural sex relations, the male acting the part of a female (*ergi, regi*). That part Loki gets back when he is called *áss ragr*. This may refer to the myth of Sleipnir, to whom Loki gave birth. When Odin is accused of sorcery, it comes to the same, as witchcraft was considered indecent for men.

Such accusations of homosexuality or effeminacy recur not only in the heroic poems and mythical sagas but even in the Sagas of Icelanders and actual life. A unique custom of a guest sharing the matrimonial bed of his hosts, as it seems of Irish origin, is found in *Rígsþula*. In Iceland the nearest parallels would be some modern tales of *jus primæ noctis* for the parson who marries the couple.

4. In the heroic poetry, love is certainly one of the most powerful forces of fate. But the poets can use apparently only certain aspects of it for their purpose. There is no real lovemaking, and where one might expect an idyll, the heroine instead teaches her lover wisdom (*Sigurðrífu mál*). Still less does sensual love come to an expression: Sigurður lays a naked sword between him and Brynhild, Völundr's rape of Böðvildr is passed over in silence, and so is Svanhildr's offence against Jörmunrekr. It is in heroic deeds that love is manifested: the young hero has to fight a rival to win the heroine (*Helga kviða Hjörvarðssonar*, *Helga kviða Hundingsbana I* and *II*), sometimes even her father and brother (*Helga kviða Hundingsbana II*), which of course makes a tragic figure of both. Then sometimes the love (*Helga kviður*), sometimes the family ties prove the stronger. Thus Guðrún goes so far as to kill her own offspring and serve it to Atli in taking revenge for his killing her brothers.

And Signý not only sacrifices her sons so that vengeance for her father may be wreaked on her husband, but she also purposely has a child, Sinfjötli, with

her brother Sigmund to help him kill her husband. After which deeds she does not consider herself worthy of life and dies voluntarily with her husband. It must be noted though that as depicted in the poems neither Guðrún nor Signý love their husbands.

Finally there is that most famous double love triangle of Sigurðr-Brynhildr and Guðrún and Brynhildr-Sigurðr and Gunnarr, where the original lovers Sigurðr and Brynhildr are separated by magic so as to marry respectively Guðrún and Gunnarr, the children of Gjúki, king of the Burgunds. When Brynhild realizes the truth, she first eggs on Gunnarr to have Sigurd killed, then kills herself. Such is the way love is pitted against other strong forces in the life of heroes and heroines to create dramatic tension of the highest order. But it also finds expression in laments over the deceased lover, sometimes dwelling on his perfection, as in Sváfas's beautiful description of Hielgi Hundingsbani, or on his exploits and death (cf. the so called *Guðrúnar kviður*), seldom lingering on past love affairs as in *Oðdrúnargrátr*. The tone of the flytings occurring in the heroic poems (*Helga kviður*) is similar to that of *Lokasenna* (§3).

5. Reference to sorcery and witchcraft as something indecent has already been made (§3. *Hávamál*, *Lokasenna*). But we are told plainly by Snorri Sturluson, *Heimskringla*, *Ynglingasaga*, ch. 7, that Odin taught the goddesses this art "because it was so steeped in effeminacy (*ergi*, from *argr*, *ragr*, "effeminate, cowardly," cf. *blauðr* "female [of a dog, cat, etc.], effeminate, cowardly") that men could not practice it without disgrace." Obviously some old sexual rites were involved, the nature of which, however, is unknown.

In confirmation of this view we find women actually more often engaged in or associated with witchcraft than men. Not a few *völur*, witches, are mentioned, some of them of high repute as, e. g., the mother of Völu-Steinn (*Landnáma*), þórdís spákona (*Kormáks saga*) and

þorbjörg lítil vólva of *Grænlandinga þáttur*. But the few men who are supposed to have practised the art are almost invariably despised and often killed for their crimes. Cf. the story of Rögnvaldr réttilbeini, son of King Haraldr hárfagri (*Heimskringla*, *Haraldar saga hárfagra*, ch. 35), the story of Kottkell and Gríma (*Laxdæla saga*, ch. 35-37) and Þorgrímr nef (*Gísla saga*, ch. 11).

6. Contemporary with the Eddic poems runs an unbroken line of the so called Scaldic poetry, most of which is Court poetry, composed in praise of kings and chieftains extolling their deeds by land or by sea.—But poets in love would also compose poems in praise of their beloved; of these love-poets the best known are Kormákr Ögmundarson Hallfreðr Öttarsson vandræðaskáld, and Þormóðr Bersason Kolbrúnarskáld. However, fragments at best are left us of these *mansöngvar*, probably because they were strictly prohibited by law.

Among those whose verses on women have been left are the two royal brothers, Ólafr the Saint (†1030) and Haraldr harðráði (†1066). The last-named has composed a humorous poem to his fiancée in which he enumerates his deeds, closing each verse with the refrain: "yet the fair lady of Garðar rejects me." Tradition also has it that this king was very appreciative of rough fun (cf. §13). The only love poems which have been preserved more or less intact are the *Jónsvíkinga drápa* and *Málsháttakvæði*, the first undoubtedly, the second probably, by Bishop Bjarni Kolbeinsson of Orkney Islands (flourishing 1190-1222). These poems are interspersed with personal references lamenting the author's love of another man's wife—obviously an echo of the French troubadour-poetry.

A totally different kind are the derogatory poems, called *níð* or *flím*, which often contained vulgar sexual allusions in the vein of *Lokasenna*. As such may be mentioned the *níð* about the missionary bishop Friðrekr and Þorvaldr yíðförli: "The bishop has borne nine

children, Þorvaldr is the father of all of them." To a modern this seems quite harmless mockery, but the pious Þorvaldr killed two men to avenge the shame. Finally may be mentioned some stray verses usually preserved as a nucleus of a story having some bearing on love or sexual things of which more in the Sagas.

7. Saga is a wide term ranging from chronicles of historical facts to the wildest romantic fiction. The written saga begins with Ari Þorgilsson's *Íslendinga bók* (composed in the years 1122-1133) which gives a strongly scientific leaning to the following literature: *Noregs konunga sögur*, the Sagas of the Norwegian kings, (covering the period from the beginnings up to 1280), *Íslendinga sögur*, the Sagas of Icelanders (covering ca. 930-1030) and the nearly contemporary *Biskupa sögur*, Sagas of the Bishops (covering ca. 1056-1331) and *Sturlunga saga* (covering ca. 1120-1262).

Gradually the historical interest gives way to a craving for the remote-romantic-fantastic, and so the native heroical-mythical sagas, *Fornaldar sögur*, and the southern (French-English) romances and stories of chivalry, *Riddara sögur*, *Lyggi-sögur*, break forth.—All of these genres are in full flower during the 13th century, but only the romantic-fantastic school continues to live on, while—with few exceptions—the other genres are only copied in the following centuries and literary activity as a whole greatly diminishes around 1400.

Even if all of this material, with addition of the law books (*Grágás*) is important to win a full picture of the life and customs of the people during four centuries, yet the Sagas of the Icelanders are most valuable culturally because they describe the common people of Iceland in a period of changing faith and, as a literature, because their art is hardly matched in any of the other genres with the single exception of Snorri's *Heimskringla*. They will therefore be used as a basis for the following sketches.

8. The Sagas of the Icelanders con-

tinue the tradition of the heroic poems of the Edda (§4) with regard to their attitude to love. Fame comes first, then wealth and a good marriage with children to continue the family, but love is little spoken of. Yet even the sturdiest can be stricken with it, and not all escape as lightly as Egill Skallagrímsson who becomes inarticulate for a while, until his friend worms out of him the secret and whips him into a marriage to last for life. There are plenty of other and more potent love themes in *Egils saga* but the sagaman leaves them unexpatiated.

Still there are sagas where the love motives are the central themes, above all *Laxdæla saga*. In that powerful story the fates of Sigurðr-Brynhildr-Guðrún-Gunnarr are reenacted in a realistic way and without recourse to magic in everyday Icelandic society. Two other triangle love stories of lesser dimension and power are *Bjarnar saga Híttdæla-kappa* and *Gunnlaugs saga ormstungu*. In both a poet is treacherously deprived of his bride-to-be by another poet, they fight it out to the bitter end both with verses and weapons. *Gunnlaugs saga* especially shows clearly influence from the foreign romantic literature (*Tristrams saga* translated in 1226), the heroine dies romantically of sorrow unfolding the mantle of her lost lover. We know the three poets mentioned in § 6 chiefly through their sagas: *Kormáks saga*, *Hallfreðar saga* and *Fóstbræðra saga*. All of them, especially the two first named, had the fault, not uncommon in poets, to love their women the more the less chance they had to attain them, but lost interest as soon as the way to marriage was cleared.

Kormákr praises Steingerðr in very exaggerated terms and reviles her husband in no less aggravating ways, but she remains in his heart and on his lips until death. The wheels of fate are started in *Gísla saga* by an unguarded, though veiled expression of a woman, which rouses the jealousy of her husband. Otherwise that saga is remarkable for the picture of the never waver-

ing faith of the outlaw's wife. Love, finally, plays an important part in *Njáls saga* (ca. 1300). Here we have the demonic personality of the beautiful Hallgerðr destined to cause the death of her three husbands, ending at last in the arms of the rogue Hrafnr, while, by way of contrast, the matter of fact Bergþóra follows her aged husband to death in the flames with imposing grandeur.

9. The family is an important unit in Old Icelandic society, although not as compact as in some other Germanic communities (cf. B. S. Phillpotts, *Kindred and clan in the Middle Ages and after*). There is the family in the widest sense, the kindred, where kinship—according to the old *Baugatal*, stipulating amount of wergild to be paid each male member of the kindred—ended in the fifth degree. Otherwise, of course, the members of the kindred were in duty bound to avenge the killed according to their relationship. Inheritance followed the same grades of kindred, but here also the women had rights one degree below the men of the same grades.

And there is the family in the narrower sense consisting of parents, their children and foster children. In neither case do we find an absolute ruler of the affairs of the family, although the father of the family, and the male line of the kindred is more important than the mother and the female line, hence the patronymics *Skúli Þorsteins-son*, *Helga Þorsteins-dóttir*: "S. the son of Þ., H. the daughter of Þ." The kindred is led by its ablest members, but they are not autocrats. And in the family in narrower sense authority is divided between the father and the mother, even the children, especially the brothers, when they grow up. Also in infancy the children seem often to have enjoyed a good deal of freedom, and there are many instances of precocious youth in the Sagas. It seems that in the earliest times boys came of age at twelve, while later the limit was set at sixteen.

On the other hand there are examples

of almost patriarchal families, as the family of Njáll in *Njáls saga*, where the sons and even the married daughters remain with the parents and let themselves be guided by them even in later life. But that is exceptional. One of the major concerns of the family in the narrower and the wider sense was the marriage of the young men and women. It was usually arranged by the father or the nearest relatives, sometimes, especially for political causes, even without consulting the young man or woman, but seldom without the counsel of other influential members of the family or the kindred.

10. According to the laws (*Grágás*) the status of woman was very narrowly limited, as one would expect in a society where the individual has to vindicate his own right. She was exempted from the most sacred duty of vengeance, and, conversely, did not receive any wergild for a killed relative, except for her father. Her rights to inheritance were a grade below her brothers', and she could not hold the public office of *goðorð*. Yet she was subject to punishments, like a man, for offences, unless she be pregnant. Moreover, a woman was in the tutelage of some man of her family (father, guardian, husband) for life, unless she become a widow. She could not transact any major business, above all not marry, without their counsel.

In case of seduction she must declare the paternity under pain of torture, besides paying a fine to her guardian for the disgrace to the family. Conversely the guardian must bring action against the seducer (vengeance or outlawry) and guard her against verbal injury; a lovesong, *mansöngur*, was enough to bring vengeance or outlawry on the offender.

The Sagas have numerous instances of young men beginning to visit with a girl; the girl's family then serve him a notice to ask for her in marriage or stay out; if he does not take that advice, there is trouble for him. But there is no example in the Sagas of seduced women being held responsible for

their offence, while vengeance is most certain for the seducer. Either we have here to do with differences in the letter of the law and common practice, or the Sagas and the laws represent different periods.

There are those who believe that the laws reflect younger justice influenced by Christianity. Certainly the women of the Sagas play a greater rôle in society than one would suspect from the letter of the law. If they do not wreak vengeance in person, we find them as the moral force behind the men, egging them on to deeds. We find them as healers, as priestesses, and if they may not wield a *goðorð*, we find them nevertheless commanding men by sheer force of their personalities, as Þorbjörg digra in *Grettis saga*. On the whole the strong woman, *kvenskörungr*, is a favorite personality of the Sagas.

11. There are two words for marriage in Icelandic : *brullaup* (*brúðhlaup*) and *brúðkaup*. The first would seem to point back to times when kidnapping of the bride was in fashion, but only one example of elopement is actually found in the Sagas (*Egils saga* ch. 32). The second refers to her being bought, and that stage is still partially recognizable in the phraseology and rules of the laws.

A marriage is illegal—and the children illegitimate—unless the bridegroom “buy” (*kaupa*) her from her family (father, guardian) for a certain sum, called *mundr*. However, neither the Sagas nor the laws have remained at this primitive stage in the development of marriage. Actually it is a family affair where nobility and power of relatives is carefully calculated on both sides and where the bridegroom’s *mundr* is balanced against the bride’s dowry, *heimanfylgja* (not stipulated by law), both of which become the personal property of the bride and remain so in case of divorce. Theoretically the bride has no voice in these proceedings of *festar* or engagement, the contract being made in presence of witnesses between the bridegroom or his spokesman and her guardian.

Marriage could not take place without *festar* preceding, and to accomplish the union, bridegroom and bride must go into one bed in broad daylight before witnesses. The Sagas show that *festar* could for political reasons be contracted without the knowledge of the bridegroom, and, conversely, that contracting marriage without asking the bride could spell danger. Marriage feasts lasting for days were given by the parents of the bride unless otherwise decided. Love is seldom mentioned until after the marriage, when it usually springs up spontaneously.

12. According to the laws, divorce could be granted if one mate inflicted wounds upon the other, if the man wanted to take his wife abroad against her will, and if both were too poor to support children and needy relatives. To this are added the canonical rules of forbidden relationships, but curiously enough, neither adultery, desertion, nor outlawry is mentioned as grounds for divorce. The Sagas mention other things: such as a man wearing a woman’s shirt (with a low neckline) or a woman the breeches of a man (with no opening in the crotch) (*Laxdæla saga* ch. 34), impotence of the man (*Njála*, Hrútr and Unnr, ch. 7), derogatory verses (*flimtan*) (*Njála*, Þráinn’s wife, ch. 34), and battery (*Eyrbyggja saga*, Þórdís and Börkr, ch. 14, cf. *Gísla saga* ch. 36). Judging by the Sagas, dissolving a marriage seems a surprisingly easy matter, and quite often the strong wives hold divorce (and ensuing division of property) as a Damocles’s sword over their husband’s heads to whip them into obedience.

13. The law is silent on concubinage except as can be gleaned from some paragraphs on illegitimate children. There are several instances in the Sagas, although the thing is decidedly exceptional during the Saga-age. The *lausabrullaup* of *Egils saga*, ch. 7 is insofar different from a legal marriage, as the bride was not “bought by *mundr*” and hence the children were illegitimate. In the Sturlunga-age (ca 1175-

1275) it grew to alarming proportions, most of the chieftains having many concubines and a host of illegitimate children.

Rape was also one of the crimes practised in that troubled age of civil warfare and dissolute morality. It may be noted here that, although illegitimate children both in Iceland and Norway had very curtailed rights (of inheritance, etc.), yet within the royal family of Norway illegitimate sons had the same right to the throne as the legitimate ones.

14. Just as the flytings of *Edda* (§3) and the *níð* of the Scaldic poetry (§6) so the Sagas contain a few references to sexual deviations, especially homosexuality. Almost always these are instances of *níð* or defaming utterances, they are considered very derogatory in nature and the laws have a sharp clause against them. (It is *fullréttsisörð* if a man is said to be *ragr* or *sorðinn* or *stroðinn*; these are p. p. of *scrða* v. t. "coire"). Instances are the two wooden churls found in Þórðr Kolbeinsson's beacon (*Bjarnar saga Hítðæla-kappa*, ch. 17), the *illmæli* about Guðmundr ríki (*Ljósvetninga saga*, ch. 13 and 19, cf. *Ólkofra þáttir*) for which he killed the originators, several infamous allusions in *Bandamanna saga* (ch. 2, masturbation?) and *Ólkofra þáttir*.

As the examples of Þorvaldr víðförli and Guðmundr ríki show, these insinuations were not taken lightly, until, as it seems, at the Court of king Haraldr Sigurðarson enn harðráði (†1066), who seems to have had a taste for spicy tales and vulgar allusions if we may believe his Saga (in *Morkinskinna* and later collections). He may have acquired his taste for these things and his sense of humor at the Byzantine court, where he was commander of the Værings for a while.

15. Changing attitude towards love and sex in Old Icelandic literature. Since most of the Eddic poetry is difficult to date and the Scaldic poetry is very fragmentary, it is hard to come to any conclusion with regard to eventual

changes in attitude toward love or sex prior to the 12th century, when writing begins. The coming of Christianity must, however, have had considerable influence in this respect. Adam of Bremen mentions *neniæ multiplices et inhonestæ* in connection with the Frey-cult at Uppsala; these were probably erotic poems, since Freyr was god of fertility, but no trace of them is left. Cp. also the different attitude of *Hávamál* and *Völuspá*, §3.

Barring *níð*, *flimtan* and flyting, which obviously goes back to heathen times, there is very little in the whole body of Heroic and Scaldic poetry which could have hurt even a Victorian modesty, at least up to the times of Haraldr harðráði (§§6 and 14), if the indecent verses of Sneglu-Halli are genuine, but they do not occur in the earliest version of his *þáttir* in *Morkinskinna* (ca 1220). Yet, nobody knows how much of outspoken Scaldic verse may have been lost and we have at least one in which the aged Egill Skallagímsson speaks of this impotence (*Egils saga*, ch. 85). Other "indecent" verses in later sagas (*Njála*, *Grettis saga*) are hardly genuine. The early Icelandic clergy was neither strong nor very strict in sexual matters; celibacy was never enforced in Iceland, yet it may have had a hand in purging the literature of "indecent" elements.

Thus we know that the saintly Jón, bishop of Hólar, upon his accession to the see in 1106 strictly prohibited dancing to the alternate singing by man and woman of erotic verses (*blautlig kvæði ok reglilig, mansöngsvísur*, *Biskupa sögur* I, p. 237). Dancing he failed to abolish, as references in *Sturlunga saga* show, but nothing is left to us of this poetry. Only in homilies, legendary and miracle stories the priest could speak candidly about sex, and this frankness is imitated in later sagas. The early Sagas show the same shyness toward love as the heroic poems, feeling, however strong, does not find expression except in short pointed repiques, in verse, or in action. Neither do the earlier Sagas refer to

sexual matters, thus Egill's words accompanying the verse mentioned above are only "Less did women mock us in our youth."

This almost prudish attitude is nowhere more clearly visible than in the works of Snorri Sturluson (1178-1241), author of *Heimskringla*, a Chronicle of the Norwegian Kings, the Prose *Edda*, an *ars poetica* full of mythologic and heroic legends; his authorship of *Egils saga* is disputed. Snorri tones down or omits most references to love affairs of the kings in his sources and treats with velvet gloves the spicy anecdotes of *Lokasenna* and popular myth (e.g. the tale of Þórr and Gjálp, *Edda*). This has been attributed to his courtliness, but it seems to agree well with the attitude of Sagas from the same period (1200-30)—curiously enough, considering the lax morality in sexual as well as other matters of that age (cf. §13).

But in the last quarter of that century, and in the 14th century, there is obviously a growing interest in the psychology of love, sensual love, and even obscenities. Examples are the frank statement of sexual incompatibility of Unnur in *Njála* (ch. 7), towards 1300, the spicy tale of Grettir and the maid (*Grettis saga* ch. 75, 14th century) and the burlesque repiques of *Bandamanna saga* (before 1450) and *Ólkofra þáttur* (cf. §14). This change is obviously brought about by the French romances with their well known interest in sensual love; *Tristrams saga* is translated as early as 1226 and *Karlamagnúss saga*, a compilation of various works from *Chanson de Roland* to the *Pelerinage of Charlemagne* belongs to the latter half of the 13th century. More translations and imitations follow in the centuries to come: *Riddarasögur*, *Lygisögur*.

The native *Fornaldarsögur*, mythological-heroic and fantastic tales are also to some extent influenced, yet, the burlesque descriptions of coitus in *Bósa saga*, ch. 7, 11, 13, (towards 1400) are quite unique. The changed attitude is also visible in late copies of the Kings sagas: *Flateyjarbók* (ca. 1380-90) in-

corporates a unique tale on phallus-cult in Norway: *Völsa þáttur* and adds obscene verses and anecdotes to *Sneglu-Halla þáttur*. Genuine or not, these verses would hardly have been put into writing without influence from the European literary movement to which we owe Boccaccio's Decameron and some of Chaucer's Canterbury tales.

16. With 1400, a long period of decadence begins in the Icelandic literature, not successfully broken until the 19th century. Romantic-fantastic stories in prose and verse, the so-called *rímur*, a new genre of the 14th century, run through all of these centuries, but the whole is too imperfectly explored to allow a tracing of tastes through the whole run. In the main the attitude towards love and sex in the 14th century seems to have survived, perhaps a little toned down, at least down to the Reformation (1551). One judges so by the attitude of the Catholic clergy towards dances, as it seems, always a tolerant one except in the late 13th and early 14th centuries.

But *rímur* are obviously to some extent derived from the old dance poetry, they were also undoubtedly used in dancing themselves. A characteristic element of *rímur* is the *mansöngur* or love song, probably in direct continuation of the dances, in which the poet voices praise of women, in particular his own lady, or gives vent to lamentations of lost love, old age, etc. Here an influence of the German *Minnesang* has been suggested. Occasionally *rímur* are more outspoken about sex than would have seemed decent in the 19th century, but stories in the vein of Boccaccio are rare, e.g. *Bósa rímur* (from *Bósa saga*, §15), *Skikkjurímur* (from *Möttuls saga*—*Le mantel mautille*) and *Virgiless rímur*.

Rather uncertain is the history of the Icelandic ballads, *Íslensk fornkvæði*, but they are supposed to have been used in dancing. They are very lyrical and occasionally have an erotic tinge.

17. The Reformation (1551) leaves a deep impression on the Icelandic nation not only in matters of religion but also

in the political-economical field as well as general culture and literature. Under cover of religious zeal the king broke the power of the old catholic church, taking care to confiscate for the crown its enormous estates. This, and the trade monopoly inaugurated around 1600, started the people on a swift down grade which reached its low near the end of the 18th century.

The temper of the Reformation era in matters of sexual morals may be judged by the Stóridómur or "Great Doom" of 1564, forced upon the Icelanders by the Danish Governor General, according to which adultery became capital offence. This ordinance remained in force up to 1838. The Catholic church had only imposed fines. The Lutheran clergy, headed by Bishop Guðbrandur Þorláksson (†1627) and armed with the new printing press, started an ardent campaign against most of the profane literature including Sagas and *rímur*, but especially against *mansöngvar*, *afmorskvæði* and *brunavísur* as the erotic poetry used at dancing in the 16th century was called.

A body of this poetry, also called *vikivaka-kvæði*, is still left, dating chiefly from the 17th and early 18th century; much of it is of erotical content, some (the so-called *vítavísur*) reminds one of *Lokasenna*. This dancing during vigils (*vökunætur*, *gleðir*) seems to have been a craze of the 16th and 17th centuries. Always charged with immorality the *vikivakar* finally succumbed around the middle of the 18th century before the combined attacks of the clergy and the puritanical monarch Christian VI (†1746) whose Ordinances of Home Discipline and Home Visitation were designed to put a stop to all cultural activities of any kind, except the spiritual and devotional. But in spite of its zeal the Lutheran clergy was not below making use of obscenities in defaming the Catholics as may be seen e.g. in *Einvaldsóður* by the Rev. Guðmundur Einarsson recounting the legend of Johanna the Pope. And the Rev. Stefán Ólafsson, chief poet of the

17th century (†1688) excels in burlesque poetry which quite often touches the obscene.

18. After the middle of the 18th century a swing towards tolerance and innocent enjoyment is noticeable. The old dances and festivities "barring the tricks of Amor, mockery or obscenities" are approved by the learned naturalist and poet Eggert Ólafsson (†1767), in whose poetry we meet a few love poems which border on the obscene. His example is followed by the Rev. Jón Þorláksson (†1819), who is more outspoken, as may be expected because of his weakness for the fair sex. The most prominent apostle of Enlightenment, Magnús Stephensen (†1833), who dominated the literature at the beginning of the 19th century showed a similar tolerance towards this matter.

19. From the earliest times the Scaldic metres had served as vehicles for occasional verses, but after the origin of *rímur*, these metres, especially the four-lined strophe, ousted the Scaldic ones. Occasional verses (*lausavísur*) are born of the moment and deal, among other things, also with love in all of its aspects including the obscene. *Lausavísur* belong to all ages, but only few have been preserved before 1600, still less so the obscene verses, *klámvísur*, which always had to live more or less under cover. Yet these were surely always common and good poets as well as bad would contribute to them. But there is a certain class of this lewd poetry which is so characteristic of Iceland that it deserves mention. These are the so-called *beinakerlingar-vísur*. In Iceland the long mountain trails are marked by *vörður* or cairns. Some of these came to be called *beina-kerlingar* "bone-carlines" and supposed to be lewd wenches; the travellers, when camping nearby, would leave hollow bones in their crevasses. The hollow bones in turn contained a piece of paper with obscene verses sometimes in the name of the "carline" addressed to the next wayfarer, beseeching him to his duty towards her. These *beinakerlingar*-

vísur are known from the 17th century onwards. Cf. Jón Þorkelsson, *Beinakerlingar*, Blanda, 1923 p. 406 ff.

Mention may here also be made of *gátur*, riddles known and common in Iceland from the 13th century onwards. Some of them are very obscene in their phrasing, but of harmless meaning. This is the case with one of Gestumblindi's riddles—the oldest known collection, in the *Hervarar saga*. It is about a linen web; the king turns it over to his retainers to solve it, and they "took many guesses and not beautiful some of them."

20. The romantic movement begins with the poet Bjarni Thorarensen (†1841) who has left some love poetry of a highly idealistic character. But the real inauguration of the movement comes with the periodical *Fjölnir* in 1835. The editors of *Fjölnir* had a well defined program to promote utility, beauty, truth, and good morals, and they drive this last point home with a scathing attack on the lax morality of the people and of the *rímur*-poetry. Here we have the beginning of the 19th century puritanical attitude, which was to remain unbroken for almost a century. The poets compose love poems enough, but they are platonic, spiritual, often beautiful, but never sensual—except in their *klámvísur*, which very seldom are recorded in print. Of these poets Jónas Hallgrímsson (†1845), Gísli Brynjólfsson (†1888), Páll Ólafsson (†1905), and Steingrímur Thorsteinsson (†1913) should be mentioned. Grímur Thomsen (†1896) translated old Greek poetry which falls out of this puritanical class.

With the appearance of the periodical *Verðandi* in 1882 the realistic movement is ushered in. The poets Hannes Hafstein (†1922) and Þorsteinn Erlingsson (†1914) crave more individual freedom, and their love poetry becomes bolder, shocking to the older generation, but quite tame to us. Einar Benediktsson (1864–) and others follow their example, but there is hardly anything new, until Stefán Sigurðsson frá Hvítadal

(†1933) and Davíð Stefánsson (1894–) publish their poems in the second decade of the present century. Here a more sensual love poetry has come to the fore at last by the side of the older more platonic type.

21. The changing attitude towards love during the last hundred years is nowhere more manifest than in the Modern Icelandic Novel and Drama. The motive of love runs, of course, through it all as a central theme. But the romanticist Jón Thoroddsen, who wrote the first Icelandic novel *Piltur og stúlka* (1850), was not truly interested in the loving pair, probably because the high spiritual sphere, into which the romanticists had lifted the model lovers, did not appeal to his humoristic temperament. Hence his lovers are only commonplace types destined to marry after many complications at the end of the book.

The realists of the eighties, disciples of Georg Brandes, revolted against stagnation and authority in society, religion, and literature. Freedom was their slogan. Young people should not be forced to marry against their will (Gestur Pálsson †1891, *Karleiksheimilið*), marriage without love should be dissolved, but free love was not advocated openly; yet the doctrine was felt to be revolutionary. Hand in hand with this went agitation for the emancipation of women, authorized by law in 1915.

One of the realists, the farmer Jón Stefánsson, pseudonym Þorgils gjallandi (†1915), had an especially keen sense for love as an overwhelming natural force against which people are powerless. His love stories are consequently vivid and forceful, he was even bold enough to introduce a love meeting between his heroes (*Upp við fossa* 1902), an undertaking which brought upon his head a shower of reprobach, even from the best contemporary novelist Einar Hjörleifsson Kvaran (1859–), who in his novels and plays always has preserved the 19th century puritan attitude towards love and sex.

Even the next writer to venture simi-

larly sensual descriptions, Guðmundur Magnússon, pseudonym Jón Trausti, did so only in case of reprehensible characters (*Sögur frá Skaftáreldi* 1912), or in historical novels where the fable necessitated it (*Góðir stófnar* 1914-15). Obviously he liked to play with fire, but was careful not to commit himself in favor of sensuality. A new note is introduced by Sigurður Nordal's (1886-) *Fornar ástir* (1919). Here the longest story, *Hel*, is the life of a Don Juan, a man in pursuit of beauty and pleasure, but the author is more concerned with the psychological development of his hero than his experiences.

Following in the footsteps of the well-known playwright Jóhann Sigurjónsson (†1919), Guðmundur Kamban (1888-) began by writing romantic plays on fiery women characters, but soon he turned to social problems, including modern marriage on which he has written two plays: *Vi Mordere* (1920) and *De Arabiske Telte* (1921). In the latter he marshalls the various types of modern marriage, from the old unbreakable union to the new easy one, in which the man at least allows himself other liaisons. Kamban's greatest work is a historical novel of the 17th century, *Skálholt* (1930 ff.), about the famous but unhappy Ragnheiður, daughter of Bishop Brynjólfur Sveinsson (†1675). Her father forced her to deny publicly under oath relations with any man, but scarcely nine months later she bore a child whose father was her teacher, Daði Halldórsson. Kamban's descriptions of their love life is ultra-modern, lingering on their sexual relations as well as their emotions.

The break with the 19th century puritanical attitude came with the two writers, Þórbergur Þórðarson (1889-) and Halldór Kiljan Laxness (1902-). The first began his career with some satirical verses in which he pokes fun at the conventional solemnity, not to say unction, with which a number of ideals, including that of love, was treated by most people. He was the first to break the tabu on sexual matters and others included in "common decency" in his

Bréf til Láru (1924), a curious conglomerate of essays, short stories, and what not.

Halldór Kiljan Laxness made a name for himself and a new departure in Icelandic style with his big novel *Vefarinn mikli frá Kasmír* (1927). In it he speaks quite openly and cynically of the sexual experiences of the hero, who is a thoroughly sophisticated and disillusioned youth, and who finally, like the author himself, throws himself into the arms of the Catholic church. Here appear for the first time in Icelandic literature not only Strindberg's and Weininger's misogynic philosophies, but also Freudianism, although the author knew Freud then only at second hand. In his later novels the cynical attitude towards sex remains, his last work is a play *Straumrof* (1934), constructed over the Freudian jealousy between mother and daughter. In his collection of essays, *Alþýðubókin* (1929), Laxness advocates easy marriages in the Russian sense with the state taking care of the children, whether legitimate or not, if birth control is not exercised, as women ought to be free to do.

The well-known author, Gunnar Gunnarsson (1889-), is not interested in sex problems. Guðmundur G. Hagalín (1898-) has written some novels and short stories, in one of which a captain saves the morale of his dejected crew by telling them spicy stories. Last but not least, Kristmann Guðmundsson (1902-) should be mentioned, he is a master of the modern romantic love story.

It goes without saying that the outspokenness of Þórbergur Þórðarson, Laxness, and Kamban has met with stiff resistance from some of the older writers, e.g. Guðmundur Friðjónsson (1869-). But so far only a few signs of reversal towards the older standards of decency have been apparent among the latest generation.

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S. E.

IDIOGAMIST, from the Greek *idios*, one's own, and *gamos*, marriage. One who is capable of coitus only with his own wife, or with a few individual women, but is impotent with women in general.

ILLEGITIMACY, the state of being of illegitimate birth (from the Latin *illegitimus*, not in accordance with the law, i.e., born out of wedlock). The synonym bastardy, now chiefly used as a legal term, stems from the Old French, *bastardie*. This word appears to be derived from the medieval Latin noun, *bastum*, meaning pack-saddle; hence, a pack-saddle child, as opposed to a child of the marriage bed. Saddles were used as beds by muleteers.

Devices for Measurement.—The most dependable method is the statement of the proportion of illegitimate births to total births, thus giving the contribu-

tion of the unmarried mother to the population, or, in other words, the proportion of the total population which is illegitimate. Another method, of doubtful value, relates illegitimate births to the total of unmarried, widowed, and divorced women of conceptual age in the population under review. The weakness of this device rests in the fact that it assumes illegitimacy to be an index of the morality and continence of a given community, an assumption which authorities on the question are not likely to support.

Factors Effecting Illegitimacy.—Of the general factors, habit and custom are regarded as the most important. The closer the status of the unmarried and the married mother and the more nearly equal the rights of the illegitimate and the legitimate child, the greater the illegitimacy. Next comes the legal status of the mother and child—the degree of legal disability faced by the mother and her child. Lesser considerations include legal, social, or economic obstacles to easy and early marriage and the degrees of formality prescribed for eventual legitimation.

Among the more specific factors in the illegitimacy problem, sociologists usually consider the following to be paramount: inherent mental tendencies of the individual, anti-group standards of behavior, lack of parental control, over-crowding, and low intelligence level.

Supposed Factors.—Religion and climate used to be regarded as important influences, but both of them are subject to refutation by the known facts. Roman Catholic countries were supposed to show a lower rate of illegitimacy, as evidenced by the fact that Ireland has a lower rate than either England or Scotland. Roman Catholic Austria, however, has an illegitimacy rate three times that of England and Wales. It was assumed that warmer countries showed higher rates than any others. Yet northern countries, such as Denmark and Sweden, exhibit high rates, while Iceland maintains a rate

considerably higher than either Denmark or Sweden. The idea still prevails that cities produce a greater proportion of illegitimate children than do rural areas. In this case, both sides can be adequately proved.

The Situation in Various Countries.—Illegitimacy is comparatively insignificant in such countries as England, Italy, Switzerland, and the Netherlands. It is gradually declining in all of them. The United States had a rate of twenty-four illegitimate births per thousand births for the period 1921–23, a rate somewhat lower than that of England, somewhat higher than that of the Netherlands. The figure for the United States was composed of 14 per 1000 for the white population, 124 per 1000 for the negroes. The white rate was lower than that in any of the countries cited above. High rates prevail in Central and South America. An example is Panama, with a rate of 714 per 1000 over the period 1921–23. Here, as elsewhere in this region, the legitimate population is very much a minority group.

Legal Aspects.—Roman Law recognized two classes of illegitimates, *nothi*, born in concubinage, and *spurii*, not so born. Both had rights of succession to their mothers, while the *nothi* were entitled to support from their fathers but no rights of inheritance from them. Both classes enjoyed most of the other rights of Roman citizenship.

Early Germanic law operated on different principles. It recognized as legitimate only those whose parents were of the same social rank. All others were regarded as bastards and took the rank of the inferior parent. The aim of the code was to preserve the purity of the race, rather than to improve its morals. This may be seen from the fact that incestuous relationships were not censured. The Germanic influence lasted throughout feudal times, although it did not bind illegitimates of royal parentage, who suffered little or no stigma and no loss of inheritance rights.

Under the English code, even at the present time, the bastard still retains important disabilities. He can inherit nothing, not even a surname, although he may acquire one by reputation. He has no right of succession to real or personal property. For centuries he was held incapable of holy orders and could aspire to no position of dignity in the Church, but this doctrine has been abandoned. In civil and criminal matters not connected with the laws of inheritance, the bastard is on an equal footing with all others before the law.

The illegitimacy laws of the United States resemble those of England, save that the laws of inheritance in certain American states are more liberal than in others where the English precedent is closely followed. In some states, the openly acknowledged illegitimate may inherit from his parents.

Norway, in 1915, adopted an illegitimacy law far more liberal than anything of its kind in the United States. Under the Norwegian code, the State becomes a kind of foster mother to the illegitimate child who, in addition, has a right to his father's name and enjoys inheritance equality with legitimate offspring.

The situation in Russia is the most advanced of all. The very term illegitimacy has been outlawed since 1917 from legal terminology. Observers claim, moreover, that the social attitude toward the child born out of wedlock has become increasingly tolerant, with the result that little or no stigma now attaches to his name. In the case of Russia a proletarian society has developed an attitude toward this question which has in the past been characteristic of aristocratic classes alone.

Social Standing.—Whatever his legal position, the bastard is usually made to feel his inferiority in the judgment of society, except where that society is very lax and ignorant or else extremely enlightened. At isolated times and places of the past, notably the Italian Renaissance, the general social attitude has been tolerant, particularly when

the illegitimate child was of very distinguished parentage on the father's side. The Medici and Borgia families produced several famous illegitimates, among them Guilio Medici, who was legitimized by special Church decree and who became Pope Clement VII (1523-1534), and all four children of Roderigo Borgia (Pope Alexandre VI). One of these was the lovely and notorious Lucrezia Borgia.

Famous Bastards and Bastardizers.—There have been numerous other celebrated bastards in modern times. Among kings, William the Conqueror is the most prominent. The first Norman ruler of England, he was a man of great military experience to which he brought daring, subtlety, and skill. He was also excessively proud, defiantly assuming the title of Bastard, probably as a form of over-compensation for an innate sense of inferiority. His father was Robert I, Duke of Normandy ("Robert the Devil"), his mother the daughter of a tanner. The great humanist and scholar, Erasmus, was the illegitimate son of a Dutch priest and his housekeeper. Unlike King William, Erasmus was never able to defy his origin, which was particularly shameful for religious reasons and in the light of the Germanic views of bastardy. Though he possessed one of the most lucid and temperate minds in the history of learning, Erasmus was the victim of a neurotic personality. Not so Leonardo da Vinci, who, of all men in modern times, makes the strongest bid for recognition as a universal genius. Equally brilliant in science and art and gifted with a beautiful physique, his life was almost a miracle of intricate, yet richly creative, poise. His parents, however, were of no particular talent or distinction. His father was a notary of considerable means, and his mother, a girl named Catarina, married into the peasant class.

Other famous illegitimates were Strindberg, the younger Dumas, D'Alembert, Borodin, and Alexander Hamilton. In earlier times one might

mention James, Duke of Monmouth and still earlier, Queen Elizabeth herself, who, in Roman Catholic eyes, was of illegitimate birth.

Few women have been numbered among noted illegitimates, if the dubious and technical case of Elizabeth be excepted. The most prominent of those now known are Mary Godwin, the second wife of the poet Shelley and Cosima Wagner, the illegitimate daughter of Franz Liszt and the Comtesse D'Agoult. Both of these women are memorable for courage and individuality.

There have been many historic bastardizers. A representative list would run to great length. Suffice it to mention Rousseau, Benjamin Franklin, Byron, Wordsworth, and Napoleon. Numerous women would find place in this category, of which Isadora Duncan, the celebrated dancer, is a prominent recent example.

The stigma of bastardy has often been unjustly placed upon the names of the great. The case of Abraham Lincoln is outstanding, alike for its tenacity and its untruth.

The Eugenic Question.—The superiority of illegitimates as human specimens is often claimed. The older literatures frequently suggest that as products of "the passionate moment" rather than a sober contract, bastards are more richly endowed. There are, of course, no scientific grounds for such a view. The question seems to have arisen because conservative society felt it necessary to evince surprise that a bastard could be the physical and mental equal of a legitimate child. The need for explanation arose and unscientific eras produced unscientific explanations. Present knowledge shows the problem to be a eugenic one. Illegitimate parentage can obviously be far above the race or group norm, just as it can be, and often is, far below the norm. In the case of noted illegitimates, one or both of the parents were usually superior mentally, physically, and socially, with the result that the

child was comparatively well-born and, in favorable times and places, well reared. Opponents in this field of discussion fail of a meeting of minds because they draw their data from different social levels, forgetting that illegitimate unions very frequently jump class barriers, just as they do age, race, and nationality barriers.

The Bastard in Literature.—This is an extensive field, but a few generalizations should be useful as pointers for those interested in the subject.

It is a commonplace that literature tends to project the mores of the age and the place which produce it. Hence the varying treatment of bastardy to be expected from writers of the Italian Renaissance, Victorian England, and post-war America, each group mirroring the prejudices of its time. The great writers of all periods, however, are inclined to be more sympathetic, more reflective, and more independent than the society around them. Further, the creators of much memorable writing are so individualistic that they can be said to reflect little or nothing of the mental climate in which they exist. In consequence of these fundamental tendencies, the literary treatment of the bastard and his fate is likely to be suggestive merely, rather than of any great factual or scientific value.

The reader can introduce himself to the field through the authors and the works here given as suggestions: Thomas Mallory's version of the parentage of Galahad in the story of Launcelot and Elaine, an episode in *Morte D'Arthur*, also his account of the parentage of King Arthur himself in the same work; Shakespeare's study of the bastard, Edmund, in *King Lear*; Fielding's attitude toward his hero, a supposed foundling, in *Tom Jones*; and each of the following which treats the subject in a way characteristic of the author, if not of his age—Scott, *Heart of Midlothian*; Eliot, *Adam Bede*; Mrs. Henry Wood, *East Lynn*; Reade, *The Cloister and the Hearth*; Hardy, *Jude*

the Obscure; O'Neill, *Strange Interlude*.

Robert Barrett, *The Case of the Unmarried Mother* (1929); Miriam Allen de Ford, *Love-Children* (1931); Ernst Freund, *Illegitimacy Laws of the U. S.* (1919); Percy Kammerer, *The Unmarried Mother* (1918); George Benjamin Mangold, *Children Born Out of Wedlock* (1921); Paul Popenoe, *Some Eugenic Aspects of Illegitimacy* (Journal of Social Hygiene, 1923, pp. 513-27).

W. M. H.

ILLICIT RELATIONS. Sexual intercourse between a man and a woman not married to each other; hence, an unlawful relationship, condemned as immoral by the conventional code of ethics.

Edward Lawrence Keyes (1843-1924), one of the founders of urology in America: "If my daughter were dying from lack of sexual gratification, I would rather have her die before my very eyes than allow her to defile herself with illicit intercourse" (quoted in William J. Robinson's *Sexual Continence*, 1924, p. 64).

A. L. Wolbarst (*Generations of Adam*, 1930, p. 240): "There are illicit and extra-marital relationships which are in reality more moral and more decent than those often found in marriage. Love without marriage is in its essence far more moral than marriage without love."

INBREEDING. For centuries two different systems of mating, crossbreeding and inbreeding, have been employed in the propagation of animals and plants. In its general scope, crossbreeding includes matings between individuals belonging to different species as well as to matings of unrelated individuals in different breeds within a species. Inbreeding, on the other hand, is the mating of individuals related in some degree through one or more common ancestors. These terms can be used only in a relative sense, however, since our present conception of the origin of species implies that all members of a given species are related in some degree.

At the present time the use of the term inbreeding is generally restricted to the mating of individuals of the same family group that possess 50 per cent or more of the same "blood" (germplasm), such as full brother and sister, parent and offspring, double first cousins, etc.

A less intense form of consanguineous mating, line breeding, is the mating of individuals having at least 25 per cent and not more than 50 per cent of the same germplasm. In this category belong such matings as half-brother and sister, cousin matings, or those of grandparent and grandchild. Line breeding is generally credited with having all the benefits of close inbreeding without any of its disadvantages and is most frequently employed when it is desired to concentrate the "blood" of an especially worthy sire by mating together animals descended from him. The difference between inbreeding and line breeding is only one of degree, since the principle involved is the same in both cases.

Concerning these two systems of mating it has been claimed that crossbreeding is constructive while inbreeding is destructive. In light of recent investigation it seems more fitting to claim that crossbreeding conceals and inbreeding reveals the true nature of the stock.

The closest form of inbreeding possible is found in some plants and in hermaphroditic animals where both types of germ cells are produced by the same individual and self-fertilization occurs. In bisexual forms the mating of full brother and sister is the closest form of inbreeding, since each individual carries 100 per cent of the same breeding.

The domestication of wild animals that might prove useful to man began at a more remote period than history records. Practically all of this work was done by Asiatic peoples. Horses, camels, elephants, cattle, sheep, and goats were already domesticated many centuries before the beginning of the Christian Era. In Egypt, as stated by Winters ('25) improvement of livestock by controlling the parentage must date long before the time of Prince Mehenwetre who reigned about 2100 B.C., since in 1919 an undisturbed chamber in his tomb was opened and found to contain models of long-horned cattle, polled cattle, donkeys, sheep and goats,

and one model even illustrated the difference in type between the wild animals and the improved ones. The early Arabians took great pride in the breeding of horses, and at about 1635 B.C., it is known that Sheik Salaman owned five famous mares from which have descended the purest and best of the Arabian horses.

Inbreeding in some form must have been used extensively even during this period to establish uniformity in the various breeds and to fix the characters that seem most desirable to the owners. Doubtless different systems of mating were known and each had its advocates. Many early breeders bred from animals considered the best regardless of their relationship, but oftentimes such methods were found to produce offspring showing lowered fertility, loss of body size and of constitutional vigor, especially when the parents were closely related. Thus gradually there developed a belief that inbreeding in itself is in some way injurious. This belief crystallized into a pronounced prejudice against close inbreeding which prevailed all through the Middle Ages and is held by many livestock breeders even at the present time.

In England, in the eighteenth century, was the beginning of the rise and popularity of many of the standard breeds of livestock that we know today. Robert Bakewell (1725-95), father of modern breeding methods, was the first of a series of great breeders who dared to acknowledge that he used inbreeding as a means of fixing a uniform type in the formation of his famous herds of Longhorn cattle, Leicester sheep and Shire horses. For over twenty years Bakewell did not outcross his stock, and yet the animals constantly improved and showed no decrease in size or vigor.

As a result of the success of Bakewell's work stockbreeders became provided with a new theory of breeding. They used it to lay the foundations of various new breeds of livestock and thus practically revolutionize the older types. There is scarcely a British breed

of livestock but was established by inbreeding and has been maintained in some degree by the same practice down to the present time. In 1789, a law was passed which prohibited the importation of cattle into the Isle of Jersey except animals to be slaughtered for food. This law is, I believe, still in force. All pure-bred Jersey cattle of the present time must therefore be the descendants of the relatively few animals on the island in 1790. Taking three years as the average generation interval in cattle, this means close to fifty generations born since the island was closed to importation. Obviously there has been much concentration of lines of descent in Jersey cattle regardless of the type of mating practised.

Inbreeding in the hands of breeders less skillful than Bakewell and his immediate followers did not, as a rule, prove a success, and frequently it was followed by disaster. Some offspring proved to be better than their parents, others were worse. Occasionally an animal was born that was totally unlike its parentage in several characters. Believers in pedigree and believers in inbreeding found their theories breaking down. Those who bred from the best found that the best did not always produce the best, and that like did not always produce like even when the parents were seemingly superior stock. Monstrosities were occasionally born. Breeders of Aberdeen-Angus and other black breeds obtained an occasional flecked or red calf. Long-faced calves came from short-faced sire and dam, and long-legged young from short-legged parents, while indifferent racers were obtained from Derby winners.

In many places the appearance of a black lamb in a white flock or a black calf in a herd of white cattle became considered as an omen of death in the family of the owner. Why did these things happen? None of the various theories of breeding explained them. More and more inbreeding became looked upon with fear and suspicion and very conflicting theories regarding its

value became prevalent. Breeders, apparently, formed judgment solely from their own experiences with different animals belonging to various herds. No one arrived at any satisfactory understanding of the fundamental principles underlying inbreeding, nor was any reliable judgment regarding the working of inbreeding possible until the mechanism of heredity became known and carefully controlled experiments with animals and plants had demonstrated the truth of the laws found to govern the transmission of inherited characters.

About the middle of the last century, Charles Darwin began a study of the effects of domestication on various cultivated varieties of plants and of animals. From widely different sources he obtained data on the subject, which, naturally, included many references to the results of different breeding methods practised. The very conflicting reports regarding the effects of inbreeding in various forms interested him greatly and he sought an explanation for them.

Finding that an analysis of a mass of isolated facts did not give any definite rule by which to judge under what conditions inbreeding might be expected to produce good effects that would outweigh the bad effects, Darwin began carefully controlled series of experiments on many different plants which were continued for a period of eleven years. Normally cross-pollinated plants were self-fertilized and their descendants inbred for many generations; inbred plants were compared with each other and with plants of the same species that were produced by cross-pollination; various inbred lines were crossed among themselves and with stock forms. The results obtained with *Ipomae* and *Minulus*, the two plants longest inbred, were quite typical of those obtained with other forms. Plants of the first self-fertilized generation were clearly inferior in growth and in general vigor to cross-pollinated plants, but there was little further loss of vigor in succeeding generations. The inbred plants became noticeably more uniform in all visible

characters, and sometimes plants appeared that were equal or even superior in vigor to the cross-pollinated stock.

After several generations of inbreeding, Darwin found that it made no difference in the resulting vigor whether the plants were crossed among themselves or self-fertilized. When, however, different inbred lines were crossed there was a noticeable increase in growth and vigor. In commenting on these results, Darwin ('76) states: "It is not the mere crossing of any two individuals which is beneficial to the offspring. The benefit thus derived depends on the plants which are united differing in some manner, and there can hardly be a doubt that it is in the constitution or nature of the sexual elements." Darwin was thus the first to show that it is not the act of crossing but the union of different germinal complexes that induces vigor.

Although Darwin clearly recognized the value of inbreeding in fixing type, he believed nevertheless that the evil effects of inbreeding accumulate and that animals and plants continuously reproduced in this manner must eventually be exterminated. He failed to realize that the results of his own work did not prove this assumption, since there was little loss of vigor in his inbred lines after the first generation.

Darwin's ('75) conclusions regarding the effects of inbreeding, based on the results of his own work and on data received from others, are as follows: "Long-continued close interbreeding between the nearest relatives diminishes the constitutional vigor, size, and fertility of the offspring; and occasionally leads to malformations, but not necessarily to general deterioration of form or structure.—With some animals close interbreeding may be carried on for a long period with impunity by the selection of the most vigorous and healthy individuals; but sooner or later evil follows. The evil, however, comes on so slowly and gradually that it easily escapes observation, but can be recognized by the almost instantaneous manner in which size, constitutional vigor, and fertility are regained when animals that have long been interbred are crossed with a distinct family."

In 1865, ten years before Darwin published the first of his two momentous books dealing with the effects of domestication and of cross

and self-fertilization, an Austrian monk, Gregor Mendel (1822–84) of Brunn, published in an obscure journal the results of his epoch-making experiments on hybridizing different varieties of garden peas that were to revolutionize the then current ideas of breeding and of heredity. Mendel was so little known that his work attracted practically no attention, and was soon forgotten to remain unknown to scientists generally for nearly fifty years. Had Darwin known of the principles of Mendelism and that recessive, deleterious characters may exist for generations in a stock without manifesting their presence, doubtless his views regarding inbreeding would have been greatly changed.

Darwin's work aroused greater interest in the study of inbreeding among zoologists than among botanists, and led to many series of inbreeding experiments, chiefly on small mammals. Probably the most widely known experiments of this time are those of Crampe, Ritzema-Bos and von Guaita on rodents, which gave results that further increased the prejudice against inbreeding and for many years served as classic examples of its harmful effects.

Crampe ('83, '84) started his work in 1873 with a litter of rats obtained from mating an albino female with a gray and white male, and inbred their descendants in various degrees of relationship for seventeen generations. He found that fertility decreased and sterility increased as the generations advanced. Various kinds of abnormalities appeared and the animals showed an increasing susceptibility to disease. Ritzema-Bos ('94) used as foundation stock for his experiments rats obtained by crossing an albino female with a wild gray male. These rats were inbred for six years during which time there was a gradual decline in litter size and an increase of infertile matings. Von Guaita ('98) crossed white mice from a stock already highly inbred with Japanese waltzing mice and inbred their descendants for five generations. In this case also there was a continued decline in fertility and in the average size of the litters cast.

None of these experiments can be regarded as a critical test of the effects of inbreeding because in each case the foundation stock used came from a cross between different varieties of animals. Such crossings (hybridization), as is well known, frequently have a marked

effect on fertility and among hybrid offspring from various crossings all grades of productiveness from an increase over normal to complete sterility have been found. These experiments show unquestionably that in the hybrid stocks used fertility was diminished by inbreeding, but they give no valid evidence regarding the effects of inbreeding in a pure race.

Mendel's long forgotten paper was unearthed in 1900. In it Mendel describes the results of his work in terms which later were found to accord with important discoveries made in cytology, and, as East and Jones ('19) have aptly stated, "Mendelian heredity has proved to be the heredity of sexual reproduction. The heredity of sexual reproduction is Mendelism."

Rapid progress has been made in the study of heredity through investigations patterned after Mendel's model. The subject now forms an important division of general biology, to which Bateson gave the name, "genetics." The significance of the problem of inbreeding, and its final solution, has come through various long continued experiments on animals and plants which show that the results of inbreeding, although they may differ somewhat in different families or in different species, are all explicable according to the laws of heredity as defined by Mendel.

Since the results of inbreeding are now interpreted according to the Mendelian principles of heredity with which some readers may not be familiar, a very brief account is given here of the manner in which characters are transmitted through inheritance, together with an explanation of some of the technical terms used in later sections of this article.

All heritable characters are transmitted through the germ cells and depend on unit factors (genes) each of which is handed down unchanged from generation to generation. We do not know the number of unit factors in any form, but it must be very great. These factors are segregated in the germ cells and

subsequently recombine, by chance, in various ways.

Hereditary differences, as stated by Wright ('20), are due to the existence of alternative forms of certain of the unit factors which are called allelomorphs of each other. As a rule, the egg and sperm each contain a full set of the unit factors characteristic of the race. Their union produces a double set of factors in the fertilized egg, which may be composed partly of identical factors and partly of alternative factors. An individual receiving a double set of identical factors for any character is said to be homozygous in regard to that particular character. When pairs of alternative factors are received, the individual is said to be heterozygous in regard to them. A given individual may be homozygous for certain characters and heterozygous for others. In some cases two factors which enter into an individual's heredity together have a tendency to come out together in the second generation. Such factors are said to be linked with each other and the condition is called linkage.

If one of the alternative factors in a heterozygous individual expresses itself at the expense of the other, that factor is said to be dominant. The factor suppressed is said to be recessive. Dominant factors, which are usually the ones favorable to the production of a normal, vigorous individual, always show their effects in the offspring even if only one parent has them. If both parents carry them they show in greater intensity, as a rule, because the offspring gets a double "dose" of them. Recessive factors, which fortunately are the ones that most often produce deleterious effects, do not manifest themselves unless both parents either show them or carry them. They may exist in a latent state in a stock for many generations until a chance mating brings them to light.

The first inbreeding experiments of importance made after Mendel's discoveries became generally known were those of Castle et al. ('06) on the fruit

fly, *Drosophila*. Castle and his co-workers inbred *Drosophila*, through brother-sister matings, for fifty-nine generations, and were able to maintain full fertility throughout this time by selection of breeding stock from the most productive families. Crossing two inbred lines after twenty generations of inbreeding produced offspring superior to either inbred line in fertility. Certain experiments showed, also, that low fertility is inherited after the manner of a Mendelian recessive, skipping a generation and then reappearing. In other cases it failed to reappear, indicating a complete extinction by the cross. These investigators conclude that, while inbreeding probably reduces very slightly the productiveness of *Drosophila*, the productiveness may be fully maintained by selection. "Selection has a much greater influence on fertility than does inbreeding, so that selection from the more productive pairs is able to more than offset the effects of inbreeding."

The results of this carefully controlled series of experiments, so contrary to the generally accepted views regarding the effects of inbreeding on fertility, reopened the whole fundamental aspect of the problem of inbreeding.

A few years later, Moenkhaus ('11) also demonstrated the effectiveness of selection in maintaining and increasing fertility in inbred lines of *Drosophila*. He established two distinct lines, one of high and the other of low fertility, by selecting from the fourteenth generation of a closely inbred race, pairs of individuals showing very different degrees of fertility and inbreeding their descendants through brother-sister matings. Some of these lines were continued for seventy-five generations. Moenkhaus states that in this species inbreeding in itself is not deleterious either to fertility or to vigor and that sterility can be eliminated by selection. Sterility in *Drosophila*, as shown by Hyde ('14) is an inherited character

that is not influenced by inbreeding and can be controlled by selection.

In 1909, King ('18, '18a, '19, '22) began a series of inbreeding experiments on the albino rat at The Wistar Institute, Philadelphia, to determine whether in this mammal close inbreeding necessarily leads to degeneration if the animals used are of sound stock in the beginning, and there is rigid selection of only the best individuals for breeding.

Using as foundation stock two pairs of albino rats from the same litter taken from a small stock colony that had been more or less inbred, two separate lines, A and B, were developed, matings in each line being made only between brother and sister of the same litter.

In early generations these rats exhibited all the defects generally supposed to appear in a closely inbred stock. Many females were sterile, and the litters obtained were of small size. There was also a steady decline in vitality and in the growth rate. No selection of breeding stock was possible at this time and any rats that would breed were used to continue the lines. It was noted, however, that rats in the stock colony that were not being inbred exhibited the same evidence of degeneration as did the inbreds. The cause in both cases was found to be an inadequate diet. When the diet was changed there was at once a pronounced improvement in the condition of all the rats.

From the seventh generation on it was possible to make careful selection in both inbred lines of animals to serve as progenitors of the succeeding generation. After a few generations inbred rats, when compared with stock controls, were found superior in fertility, longevity, body size and general vigor. Improvement in these inbred lines did not continue indefinitely, however, but reached its maximum at about the tenth generation when apparently the genetic composition of the lines became fixed. Subsequently a fairly uniform level in various characteristics was maintained

throughout the fifty generations that the experiments were continued according to the original plan.

From the beginning of these experiments marked differences were noted between the two inbred lines, A and B. Rats of line A were more fertile, matured earlier, and tended to be larger and to live longer than those of line B. This dissimilarity in the lines was due, evidently, to differences in the genetic

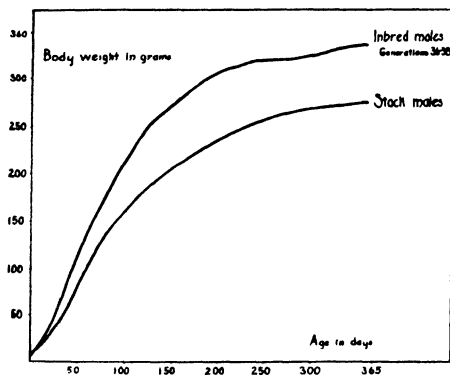


CHART 1

Graphs showing the weigh of the body with age for 89 males in the thirty-sixth to the thirty-eighth generations of inbred rats, and for 109 males in a series of stock controls.

constitutions of the two pairs of rats used as foundation stock.

The superiority of the inbred rats over stock controls was evident even after many generations of inbreeding. The more rapid growth and larger size of inbred males in the thirty-sixth to the thirty-eighth generations are indicated by graphs in chart 1.

The greater fertility of rats in the inbred lines over that in control rats, reared under similar conditions of environment and nutrition, is shown in table 1.

The results of these experiments did not support the conclusions of Crampe and of Ritzema-Bos that in the rat inbreeding per se is injurious. They showed, on the contrary, that body growth, constitutional vigor and fertility can be maintained in this animal for many generations through continued brother-sister matings, provided the foundation stock is sound, superior individuals only used for breeding, and the animals reared under uniform and favorable conditions of environment and of nutrition. The latter factors, if unfavorable, apparently have a far more deleterious effect on growth and fertility than has inbreeding itself.

This inbred strain of rats is still in existence after over twenty-five years of close inbreeding, and some 70,000 individuals have been recorded. At the present time (1935) both lines are approaching the hundredth generation of brother-sister mating. Although the strain has passed through several critical periods in the intervening years, due to adverse environmental conditions or to infection—not to inbreeding—it is again in a flourishing condition. The animals are still large and vigorous and their fertility is seemingly unimpaired.

In 1906, an extensive series of inbreeding experiments on the guinea pig was started at the U. S. Bureau of Animal Industry, and several years later

TABLE 1

Showing the average size of the litters in series of inbred and of outbred albino rats

INBRED ALBINO RATS				OUTBRED STOCK ALBINO RATS		
Generations	Number litters	Number individuals	Average number young per litter	Number litters	Number individuals	Average number young per litter
1-25	1898	14,029	7.39	260	1756	6.75
26-40	2047	15,084	7.37	254	1583	6.23
1-40	3945	29,113	7.38	514	3339	6.49

placed in charge of Dr. Sewall Wright ('22, '22a, '29) whose masterly analysis of the results has contributed greatly towards the solution of the problem of inbreeding.

These experiments were conducted in a manner that differed in one important respect from those of King on the rat. In both cases brother-sister matings were used, but in the experiments on the guinea pig no concerted attempt was made to avoid the detrimental effects of inbreeding other than the rejection of animals obviously in poor physical condition and the inevitable natural selection in favor of vitality and fertility. These experiments, therefore, show the characteristic effects to be expected from inbreeding when unaccompanied by selection, while King's work indicates the effectiveness of selection in maintaining vigor and fertility in an inbred race.

Although the experiments on guinea pigs were begun with thirty-five closely inbred families, several of them went out of existence before 1910, so that the work was really started with twenty-three separate families which were descended from twenty-three different females and nine different males. Matings in subsequent generations were, with rare exceptions, made between litter mates. Sixteen of the families were in existence in 1917, after some twenty generations of inbreeding, when their number was reduced to five families which have been continued to the present time.

This inbred race, considered as a whole, showed distinct evidence of genetic decline in every character connected with vigor when compared with cross-bred stock controls. Litter production diminished, as did also growth rate, birth weight, and average litter size. Mortality increased, resistance to disease was lessened and many abnormalities appeared.

Comparison made between different inbred families showed that some of them compared most favorably with the original stock, while others degenerated

rapidly and became extinct. Members of the same family, however, were remarkably uniform in various characteristics. As inbreeding advanced the various families showed increasingly marked differentiation with respect to weight, fertility, mortality and resistance to disease. No marked correlation between the ranking of a family in one respect and in another was noted, indicating that differentiation was not merely in general vigor but represented the fixation of some chance combinations of characters in each strain. Series of crosses between different inbred families resulted in a marked improvement in every element of vigor. The general level of the control stock was reached and in one case surpassed, showing that nothing had been lost permanently by long continued inbreeding.

The various results of these experiments are all, as Wright says,

"the direct or indirect consequence of the Mendelian mechanism of heredity. The fundamental effect of inbreeding is the automatic increase in homozygosis in all respects. An average decline in vigor is the consequence of the observed fact that recessive factors, more extensively brought into expression by an increase in homozygosis, are more likely to be deleterious than are their dominant allelomorphs. The differentiation among families is due to the chance fixation caused by an increased proportion of homozygous recessives which are more frequently deleterious than dominants both in observation and as a theoretical consequence of the effect of inbreeding. The recovery of full vigor on crossing inbred lines is explained as due to the complementary nature of these lines, each in general supplying the particular factors for vigor which had been lost in the other."

Wright's work was continued by Eaton ('32), rounding out twenty-five years of inbreeding in five different families of guinea pigs. During later years there has been a further decline in this stock in all elements of vigor, and also a parallel decline in stock controls, for which general conditions rather than inbreeding are held responsible. With the continuation of the same rate of decline, Eaton estimates that, theoretically, inbreeding could be continued for fifty-two years before the

inbred stock would be depleted, and one exceptionally vigorous family might be expected to persist for over a hundred years. The cross-bred stock controls, at the same rate of decline, would be extinct in about forty-nine years.

While the various series of inbreeding experiments just described all point to the conclusion that inbreeding in itself is not injurious, they do not furnish adequate proof that such is the case, since in all this work the results are complicated by biparental inheritance. The crucial test must be made on a form capable of self-fertilization and yet lacking nothing in the way of fertility and viability.

Such a test has been furnished by experiments on maize (Indian corn) which is one of the most variable of cultivated plants and can readily be self-fertilized, although naturally it is cross-pollinated. In 1905, Shull and East independently began series of inbreeding experiments on this plant. Shull ('08, '09, '10, '11) found that the progeny of self-fertilized maize plants were smaller, less vigorous and less fertile than those of cross-pollinated plants of the same stock, and that this retrogression became less and less in succeeding generations, indicating an approach to stability. After five generations of selfing, Shull crossed two inbred strains and found that full vigor was restored. Interpreting his work on the basis of the newer knowledge of heredity, Shull showed that the results obtained could readily be explained on the assumption that an ordinary variety of maize is really a complex hybrid, and that self-fertilization automatically isolates various types through the operation of Mendelian laws of segregation and recombination.

East ('08, '09) obtained results in accord with those of Shull, thus verifying his conclusions, and later, in co-operation with Hayes and with Jones, greatly extended the scope of these investigations on maize. This work culminated the series of carefully controlled inbreeding experiments made on

various forms since the beginning of this century that have at last, with the key furnished by Mendel, opened the door to a complete understanding of all the many perplexing effects of inbreeding and put an end to the fears and superstitions that so long existed with regard to this form of mating.

In *Inbreeding and Outbreeding*, East and Jones ('19) have recorded the results of their very important experiments on maize, and have interpreted them according to the principles of Mendelism. Later work by Jones ('24, '26) has confirmed their original findings, and has shown how great improvement can be made in different varieties of corn used for commercial purposes by the proper use of inbreeding and crossing.

East and Jones experimented with over thirty varieties of maize, raising several lines in each variety. No systematic selection was practiced, although a great deal of selection upon many characters was unavoidable. In every case selfing was found to cause a reduction in the size and productiveness of the plants, which continued only to a certain point, however, and then the plants became very uniform.

Figure 1 shows the continued decline in the size of the plants of the same family during seven generations of inbreeding. A line drawn through the tops of the plants would give an excellent theoretical "curve of inbreeding."

Aside from the reduction in growth, plants in the several lines of the same variety became more or less differentiated in grosser characters after four generations of selfing, and were very uniform in their distinguishing characteristics after eight generations. Many abnormalities appeared, such as dwarfed plants, deficiency in chlorophyll and small malformed ears. Some plants exhibited various grades of pollen and ovule degeneration and many showed marked susceptibility to disease. These defects were not found in all lines but were characteristic of different lines.



FIG. 1. The results of seven generations of inbreeding in maize. (After Jones.)

After generations of selfing, inbred plants of the same line were crossed with each other. This crossing at once restored full vigor and size to the progeny and increased the yield in some

cases as much as 180 per cent over that of the inbred parents. In figure 2 the two small, malformed ears on the outside came from plants that had been inbred for six generations. The large perfect ear in the center is representative of the yield of the hybrid plants resulting from the cross.



FIG. 2. Ears of maize after six generations of self-fertilization and their F_1 hybrid. (After East and Jones.)

When the results of these experiments on maize were linked with Mendelian phenomena it was clearly recognized for the first time that one and the same principle was involved in the effects of inbreeding and the directly opposite effects of outbreeding. Inbreeding is not a process of continual degeneration; it is a process of Mendelian segregation, and its effects are directly related to the number and kind of characters existing originally in a heterozygous condition. Inbreeding is, in effect, the isolation of homozygous types. The rapidity with which this isolation of types is effected is a function of the intensity of inbreeding. With decrease in heterozygosis there is a decrease in size and fertility because combinations of recessive factors become extracted, and

the extracted recessive is often deleterious.

These experiments showed, also, that the effects of inbreeding on fertility are exactly the same as its effects upon other characters. There is no more an accumulation of sterility on continued inbreeding than there is an accumulation of any other effect. Reduction in fertility ceases when homozygosity is reached, but the end result may be decidedly different in various lines coming originally from the same source because the function of reproduction is very complex and is evidently tied up with more complications than any other physiological process. In a naturally cross-fertilized species reproduction has more heterozygous factors affecting it than has any other character complex. Reproduction, therefore, is affected more frequently than anything else when inbreeding occurs.

The increase in size and fertility observed in the progeny when two inbred lines are crossed is due, seemingly, to the fact that dominant genes affecting vigor, which were separated from each other during the isolation of the lines, are brought together again, each contributing some element of vigor to the hybrid offspring.

In answer to the question whether inbreeding is injurious merely by reason of the consanguinity, East and Jones answer, No!

"The only injury proceeding from inbreeding comes from the inheritance received. The constitution of the individuals resulting from a process of inbreeding depends upon the chance allotment of characters preëxisting in the stock before inbreeding was commenced. If undesirable characters are shown after inbreeding, it is only because they already existed in the stock and were able to persist for generations under the protection of more favorable characters which dominated them and kept them from sight. The powerful hand of natural selection was thus stayed until inbreeding tore aside the mask and the unfavorable characters were shown up in all their weakness, to stand or fall on their own merits."

It has been questioned whether inbreeding in wild species would produce effects similar to those obtained in domesticated animals and plants which

are largely the result of selection for particular types and which, in many cases, are more widely crossed and diversified than species living in a wild state. Wild and cultivated species could not be expected to always react in the same way on inbreeding, since in wild forms there is a far more vigorous struggle for existence, and natural selection may have largely eliminated many characters detrimental to their existence so that individuals of a given species are more uniform in their germinal complex than are individuals of many cultivated species.

Darwin ('76) showed that self-fertilized plants of many species were inferior to plants of similar species generally cross-fertilized in the wild state, yet Castle's ('06) experiments on inbreeding the wild type *Drosophila* gave no markedly unfavorable results. Collins ('20) found that selfing for several generations in *Crepis Capillaris* (a common, uncultivated weed which in the wild state is propagated by both self and cross-pollination) gave results similar to those in maize. There was a gradual decline in growth and fertility which reached its maximum at about the third inbred generation; forms appeared which had never been observed in wild colonies; crossing inbred lines at once restored vigor in the progeny. On the other hand, Colton and Pennacker ('34) finding that the hermaphroditic pond snail, *Lymella columella*, when isolated, laid eggs that were self-fertilized, established and maintained an inbred strain that, for ninety-three generations, showed remarkable hardiness. Inbreeding did not appreciably affect viability in this race which continued to be as variable in the various characters studied as were wild snails.

Inbreeding in wild species, as shown in the experiments cited above, has given diverse results. The results of inbreeding any wild species will probably depend, to a great extent, upon whether natural selection has deleted the majority of detrimental genes from the germ-plasm or permitted them to

exist, continually masked by their more favorable dominant allelomorphs.

While many of the most noted strains of cattle, horses, sheep and dogs have been developed largely through the intelligent use of inbreeding and selection, there are some domesticated animals in which inbreeding has given results sometimes good, sometimes bad. In swine, for example, there seems to be a very marked difference between breeds in their reactions to inbreeding. No better example of the success of inbreeding livestock can be found in modern times than the herd of Berkshire swine, owned by N. H. Gentry ('05) who states, "I have not used a boar other than my own breeding for twenty years." Under close inbreeding for many years this stock suffered no loss in body size or vigor and seemed to improve constantly. Animals bred by Gentry took the majority of first prizes at the World's Fairs held in Chicago and St. Louis when competing with picked show animals from various parts of the country.

Hodson ('32) also has had no bad effects from inbreeding Poland-China swine for eight generations by brother-sister matings only, finding no marked loss of vigor, and the appearance of very few anomalies. Other inbreeding experiments on swine (Hays, '19; McPhee, Russell and Zeller, '31; Hughes, '33) have not given satisfactory results, probably because the particular breed or herd used contained many recessive factors which, brought to light by inbreeding, adversely affected both vigor and fertility.

Domestic fowls would seem to be excellent material for the study of inbreeding because of their size and high fecundity. Within the past few years several Agricultural Experiment Stations have carried on extensive series of inbreeding experiments with various breeds, the work being in charge of trained geneticists. The results in practically all cases have not warranted continuation of the experiments. Various reports on this work (Cole and

Halpin, '16; Cole, '22; Dunn, '23, '27; Dumon, '30; Dunkerly, '30; Goodale, '27; Hays, '24, '29, '34; Jull, '33, etc.) seem to agree, in general, that inbreeding, with or without selection, has a detrimental effect on fertility, on the hatchability of eggs and on general vigor.

Some of the results obtained in these experiments indicate the probability that fowls react to inbreeding very much the same as do the guinea pig and maize. Apparently, however, the genetic constitution of these animals contains an exceedingly large number of detrimental genes. No form of selection yet practiced has been able to segregate these unfavorable genes from those that are favorable, although eventually a way will doubtless be found to overcome this handicap. When it becomes possible to isolate desirable combinations of characters in fowls then new and better varieties can be developed, as has been done in other domestic animals of economic importance.

Theoretically, according to Babcock and Clausen ('27), the most effective means of improving any stock "should lie in the establishment by selection and inbreeding of several independent lines conforming as nearly as possible to the desired standard of excellence. Once established, trial crosses should be made between such inbred lines to determine which cross gives the best results; then from that cross a number of independent inbred lines should be again established. By repeating this process a number of times a superior uniform race would be established representing the most highly effective combination of characters."

Inbreeding, as Pearl ('15) states, is a system of mating with definite mathematical characteristics. A number of geneticists, noticeably Jennings, Pearl and Wright, have made important contributions to this side of the problem of inbreeding and have devised many general formulae applicable to various systems of mating.

Jennings ('12, '14, '16, '17) has

worked out the rate at which organisms become homozygotic through continued self-fertilization and has shown the numerical results of different systems of matings, including formulae for deriving the composition of successive generations where linkage is involved.

In a series of *Studies on Inbreeding*, Pearl ('13-'17) has made a valuable analysis of inbreeding and has given various formulae measuring and expressing numerically the degree of inbreeding in various cases. The most widely known of these formulae are his coefficients of inbreeding and of relationship, the former showing the total amount of inbreeding involved in the production of an individual according to the particular system of inbreeding used, the latter measuring the inter-relationship in the ancestry of the sire and dam.

Pearl ('15) points out that in the case of continued brother and sister mating the values of successive coefficients of inbreeding show that in seven generations all but about 1.5 per cent of the potentially different ancestral "blood lines" will have been eliminated. After sixteen generations of this kind of mating any individual so bred can by no chance possess more than $\frac{3}{4000}$ of one per cent of the different lines of ancestral descent which are theoretically possible. If, in an experiment to test the influence of inbreeding, no particular effect is observed during ten generations of brother-sister mating, it is extremely improbable that any effect will be produced by a further continuation of the same method of breeding.

The mathematical theory of inbreeding has been further developed and expanded by Wright ('21, '22, '23, '25, '33, '33a). With a conception of inbreeding based on the reduction of genetic heterogeneity present in the foundation stock, and hence, in the main, a function of the ancestral connections between the parents, Wright has devised coefficients of inbreeding and of relationship designed to make possible the interpretation of animal pedigrees in terms of the Mendelian theory of inbreeding and crossbreeding. His formula for the coefficient of inbreeding is as follows:

$$F_x = \sum \left[\left(\frac{1}{2} \right)^{n+n'+1} (1 + F_a) \right]$$

F_x and F_a are coefficients for the individual and for a representative common ancestor of his sire and dam that is himself inbred:

n and n' are the number of generations between the sire and dam respectively and their common ancestor a . The summation of values thus obtained for all common ancestors gives the required coefficient. If the common ancestor is not inbred the coefficient reduces to $\sum \left(\frac{1}{2} \right)^{n+n'+1}$.

This coefficient is not an absolute but a relative measure of the quality of an animal. It measures on a scale of 0 to 1 the degree to which the heterozygosis present in the original stock has been eliminated on the average by the system of mating practiced.

The coefficient of relationship (R) gives the degree of correlation to be expected between two individuals (X and Y) in characteristics which are entirely genetic and without dominance, conditions under which the correlation between parent and offspring or between brothers in a random-bred stock is +0.50.

$$R_{xy} = \frac{\sum \left[\left(\frac{1}{2} \right)^{n+n'} (1 + F_a) \right]}{\sqrt{(1 + F_x) (1 + F_y)}}$$

In this formula F_x and F_y are the coefficients of inbreeding of the two individuals. F_a is that of the closest common ancestor connecting a pair of ancestral lines in their pedigree, n and n' are the number of generations from X and Y to this common ancestor along the lines in question.

These two coefficients together give a complete mathematical estimation of the degree of inbreeding.

The effect of various systems of inbreeding upon homozygosis, as determined by Wright ('21) is shown graphically in chart 2. In constructing the curves in this chart the assumption is made that the system of breeding used has been initiated in a random-bred population exhibiting 50 per cent of heterozygosis in each pair of factors which represents a maximum value.

As shown in chart 2, self-fertilization is the system which most rapidly reduces heterozygosis, 90 per cent being passed in the third generation and 95 per cent in the fourth. Ten generations of brother and sister mating reduces heterozygosis to about 6 per cent, which value is nearly obtained in only three generations of self-fertilization. Degrees of relationship further removed reduce heterozygosis much more slowly.

Theoretically all forms of inbreeding

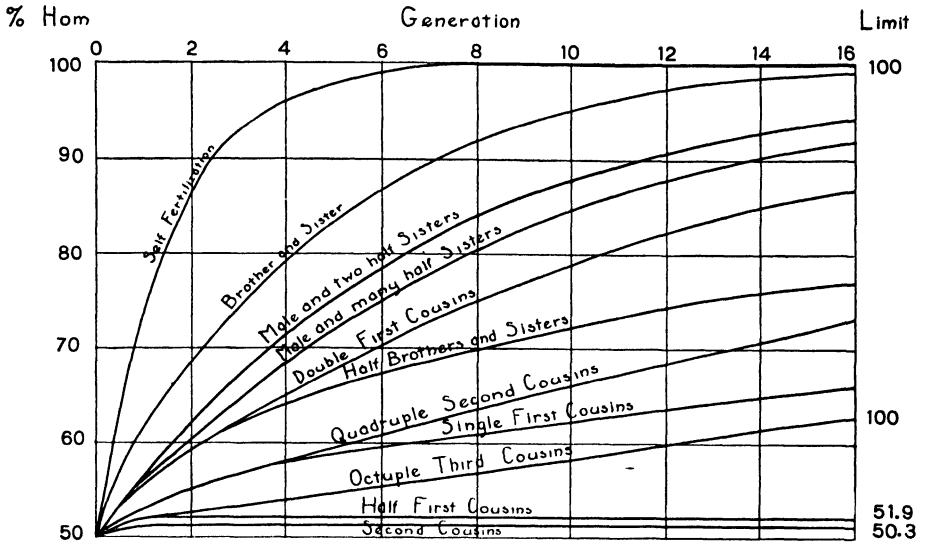


CHART 2

The percentage of homozygosity in successive generations under various systems of inbreeding. The percentage of homozygosity after an indefinite number of generations is given at the right for each system. (After Wright.)

indicated in chart 2 from self-fertilization to octuple third cousins, if followed consistently, would ultimately lead to complete homozygosity. In practice, however, this result might never be obtained in some cases because of the occurrence of mutations and linkage.

In the mating of half first cousins and of second cousins the decrease in heterozygosity is negligible, and equilibrium is reached at a value only slighter below that in a random-bred stock. Since probably the general effects of inbreeding—fixation of characteristics, decline in fertility, vigor and size—are due to increasing homozygosity, matings more remote than between first cousins are of virtually no significance as inbreeding.

The question of kinship in marriage and within what degree it should be permitted has been a matter of controversy from very early times, and many different beliefs, customs and superstitions have prevailed regarding it. Huth (1875) has compiled a wealth of data regarding consanguineous marriages in various countries at different

periods of their history and has shown that such marriages have not always resulted in the disastrous effects usually attributed to them.

The early Egyptians were an endogamous race divided into castes, and they habitually married within these castes. Following the custom of the country, the Ptolemies, when they became rulers of Egypt, usually married close relatives except those in the descending line. Their genealogy, representing one of the longest records of close inbreeding in the history of man, is shown in chart 3 which was compiled from data given by Huth.

Beginning with Ptolemy III, who ruled from 247–222 B.C., succeeding rulers throughout the following two hundred years generally married near kin. The famous Cleopatra, last of the line, was the offspring of a brother-sister marriage, the great-granddaughter of another brother and sister, and a great-great-granddaughter of a similar union.

Close inbreeding in this family did not produce harmful effects. Accord-

ing to historical records the Ptolemies were neither sterile nor particularly short lived, and they were no more subject to disease than would be expected from their luxurious mode of living. Many of them were able, illustrious rulers. The utter disregard of human life shown by this family was not peculiar to them or to other barbarous civilizations of that time, but has always been found in the history of any despotism that has ever existed. Although decline in wealth and power of

father's paternal aunt (Exod. vi, 20). In codifying and defining the laws, however, Moses prohibited similar unions. Ever since the old system ended the Jews, as a rule, have kept closely within the race in marriage.

The ablest race in all history, according to Galton (1892), was built up in Attica between 530 and 430 B.C., when from 45000 free born males surviving the age of fifty there came fourteen of the most illustrious men of all time. Among the Athenians there was much inbreeding. Although marriage was prohibited in the direct descending line, it was permitted between half-brother and sister while the marriage of uncle and niece was especially commendable. In Greek colonies children of a mixed marriage by law had no right of citizenship and were forced to emigrate. The Spartans, who took great pride in their strength and vigor, were also a closely inbred race, as were many other peoples of ancient times, such as the Peruvians, Babylonians, Hindus, Persians and Romans. Endogamous practices among all these peoples are commonly assumed to have grown out of racial or family pride with actual antipathy to foreign alliances.

Only since the beginning of the Christian Era, apparently, has there been pronounced objection to the marriage of near kin on the ground that such marriages tend to produce defects in the offspring. The Roman Emperor, Theodosius (379-395 A.D.) made a law that no man might marry his cousin under penalty of death by burning and confiscation of his property. Laws defining the grades within which marriage was forbidden were changed many times in later years, showing the great public interest in the subject. Finally, in 1215 A.D., the Church issued a decree that only persons related beyond the degree of third cousins might marry. This is the essential law of the Church even today in all countries, as Portugal and Spain, where canon law rules. Special dispensations permitting marriages of closer relatives have been

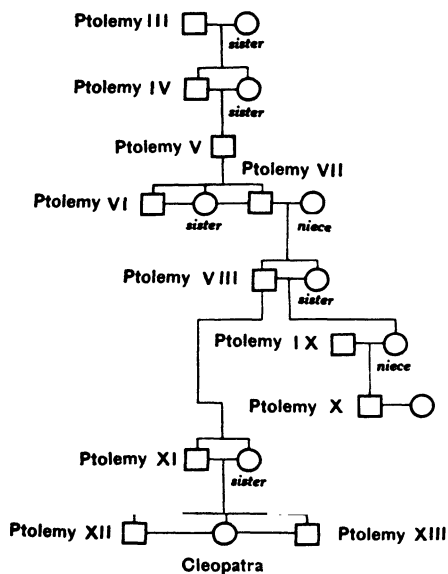


CHART 3

Lineage of the Ptolemies of Egypt from 247-30 B.C. Square symbols indicate males; round symbols denote females. Relationship of wife to husband shown under symbol for the former. (Data from Huth.)

the Egyptians started not long after the accession of the Ptolemies, it was not due to their marriage customs but to the fact that they ceased to be an exclusive people and the strength and vigor of the race were undermined by vices and luxuries introduced from other countries.

Before the time of Moses the Jews married close relatives by preference. Abraham married his half-sister, Sarah, and the mother of Moses was his

obtained in many cases, however, by members of powerful ruling families.

In England, during the reign of Elizabeth, a civil law was passed permitting the marriage of first cousins in spite of the Church law forbidding such unions. Even where this civil law prevails public opinion has discouraged the marriage of cousins all through modern history. In America today many states prohibit marriages between first cousins and a few states extend the ban to second cousins.

The lineage of the Royal family of Spain previous to the accession of the Bourbons may be cited as an example of the injurious effects that may follow long continued consanguineous marriages even when the unions are not as close as were those in the Ptolemies of Egypt. This family for centuries was characterized by three outstanding traits; genius, insanity and cruelty. The transmission of these traits from generation to generation is shown in chart 4 which was compiled from data by Woods ('06).

Ferdinand (1475-1516 A.D.) and Isabella, patrons of Columbus, were second cousins. They were wise, able rulers and apparently each was sound in mind and body. Ferdinand, however, was a "carrier" of cruelty, a marked characteristic of his ancestor "Peter the Cruel"; Isabella was a "carrier" of insanity received from both parents. Their grandson, Charles V, the greatest and most powerful ruler of his time, was a genius but very eccentric and cruel. Philip II who inherited his father's cruelty but not his genius, married his second cousin. Their son, Don Carlos, madly depraved and cruel, has been called "the worst ruler in all history." The second marriage of Philip II to his niece, Anne of Austria, was likewise unfortunate as their son and grandson proved to be weak, indolent rulers. The line ended with Charles II, an imbecile, who died in 1700 A.D.

An impressive mass of data has been collected showing other appalling results from consanguineous matings in

defective stocks: feeble-mindedness in the inbred Hill folk of New England; deafness prevalent in certain families in Martha's Vineyard Island; the notorious "Jukes" family of New York (Dugdale, '77), whose members regardless of environment have always been more or less criminal and degenerate; the "Tribe of Ishmael," a race of indigent vagrants since 1790; the worth-

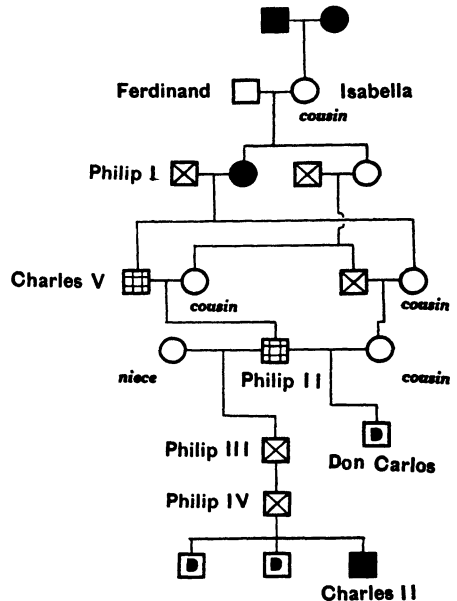


CHART 4

Lineage of Spanish rulers from 1475-1700 A.D., showing inheritance of family traits through kinship marriages. Symbols used as in Chart 3. When all black, symbols denote imbecility or insanity; those barred show extreme cruelty; when crossed they indicate melancholia or weakness. D enclosed in a symbol represents a degenerate. (Data from Woods.)

less Nam family (Estabrook and Davenport, '12) and the Zero clan (Jönger, '05). These are but a few of the many cases recorded.

On the other hand, there are equally as many instances of relatively long periods of inbreeding in isolated communities and in various family histories where no bad effects, either mental or physical, followed: The Pitcairn Islanders, descendants of one man and five women, a strong and healthy race for

many years; the Batz community in Loire-Inférieure which has existed for centuries without the appearance of hereditary defects; the Hindu Community of Tengger Hill, Java, a vigorous people yet closely inbred. Inhabitants of numerous isolated islands have married close relatives for many generations with seemingly no bad effects.

In man, as in various lower animals, inbreeding in some cases is injurious, in other cases no evil ensues. In *Heredity in relation to Eugenics*, Davenport ('11) has discussed at length the effects of consanguineous marriages and has given many charts of family pedigrees showing, without question, the inheritance of various traits, both good and bad. Davenport states, "probably no imbecile is born except of parents who, if not mentally defective themselves, both carry mental defects in their germplasm."

The following quotation from Mitchel (1865) not only expresses the general belief regarding inbreeding that existed all through the middle ages and is, in fact, prevalent in some regions even today, but it lists many of the defects that are now known to be inherited according to Mendelian laws. "Consanguinity in parentage tends to injure the offspring. This injury assumes various forms. It may show itself in diminished viability at birth; in feeble constitutions, exposing them to increased risks from the invasion of strumous diseases in after life; in bodily defects and malformations, in deprivation or impairment of the senses, especially those of hearing and of sight; and, more frequently than in any other way, in errors and disturbances of the nervous system, as in epilepsy, chorea, paralysis, imbecility, idiocy, and moral and intellectual insanity. Sterility or impaired reproductiveness is another result of consanguinity in marriage, but not one of such frequent occurrence as has been thought."

In spite of popular prejudice and laws prohibiting consanguineous marriages there has been much inbreeding in man throughout modern times. It has been calculated that every person of English descent now living would have had 8598 million living ancestors at the time of the Norman Invasion if there had been no inbreeding since that time. The fact that the total population of the British

Isles in 1066 A.D. was probably not more than three million indicates the great amount of inbreeding which must have taken place. There are very few persons of European origin who are more distantly related than thirtieth cousins, or who did not have a common ancestor at the time of William I.

Before Mendel's discovery of the laws of heredity became known there was no answer to the perplexing problem as to why some inbred families were uniformly excellent and others inclined to defectiveness. Now, with the knowledge of the mechanism of inheritance, we are able to interpret the conflicting data, since man is subject to the same laws of heredity as the rest of the organic world.

Inbreeding in and of itself, as East and Jones state, "has no effect whatever on a family whether that family be maize or man. It is a mechanical process, so functioning as to bring together like germ cells more frequently than other methods of breeding. These germ cell duplicates from the two sides of the family may carry good characters or bad characters, but the process itself is not to be blamed if the result is bad."

Nature acts with mathematical exactness and does not at one time produce one effect and the opposite effect in other cases. If inbreeding in itself creates certain defects, marriages between near kin would be expected to always produce them. If inbreeding creates virtues it would naturally always create them. Family traits in inbred families depend solely upon the chance allotment of characters preëxisting in the stock before inbreeding began. If undesirable characters appear it is because they were already in the stock and were kept from sight, perhaps for generations, by the more favorable characters which dominated them.

Considering the well authenticated fact that at least one out of every fourteen persons is carrying some hidden defect in his germplasm, there is always the possibility in any marriage that both individuals may carry numerous

latent defects each of which is of small danger to the individual or to the offspring unless the mating is with another individual who carries one or more of the same latent deleterious characters. Cousin marriages are dangerous when and only when there is the same heritable defect in the ancestry. In themselves such marriages do not and cannot create or produce abnormalities of any kind. They merely tend to bring out more frequently than do other marriages the traits, good or bad, already existing in the stock.

Marriages between near relatives should not take place until the ancestry of each individual has been carefully examined for traces of abnormalities. If any of the same heritable defects, whatever their nature, have appeared in both families in either direct or collateral lines within three generations the contemplated marriage is inadvisable. If the same defect has not appeared within this time, there is no greater danger in cousin matings than in those of unrelated persons.

At the present time marriages are practically unrestricted. Known transmittable defects in families are usually ignored, and the unfit are freely allowed to reproduce their kind and add to the increasing number of defectives that are a burden and a menace to the state and to society. Laws forbidding consanguineous marriages are, therefore, both desirable and necessary since few families are known to be free from hereditary defects.

When the time comes that an enlightened people take thought for the well being of the generations to come and realize the great value of favorable combinations of genetic factors that produce unusual ability, marriage will be based not only on the physical fitness of the individuals but also on their recorded pedigree for several generations. The race can then be vastly improved through consanguineous marriages in families in which the members show exceptional mental and physical endowment in ways that are of value to them-

selves and to the community at large. Many of the ills to which man is at present subject will vanish. Superior and desirable traits will appear in an ever increasing number of individuals and eventually become the heritage of the race.

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H. D. K.

INCUBUS AND SUCCUBUS [CAR-NAL TRAFFIC WITH THE DEVIL]. Incubus, from Latin *incubare*, to lie upon; succubus, from Latin *succubare*, to lie under (a rare word). With succubus, cf. the Latin *succubo*, one who lies under another, in an obscene sense, a lecher, and *succuba*, a strumpet. And with incubus, cf. *incubo*, one who lies upon anything—the post-classical Petronius (*Frag. Trag.*, 38) employs the term for a spirit who watches over buried treasure. The word, *incubus*, is used by the first-century physician, Scribonius (*Comp.*, 100) in the sense of nightmare, which is the meaning given to it by the Christian Fathers. (Tertullian, *Anim.*, 44; St. Augustine, *De civitate Dei*, xv, 23; cf. the seventh-century grammarian, Isidorus Hispalensis, *Origines*, viii, 11.)

It was in the early Christian centuries

that incubus and succubus, undoubtedly by analogy with the obscene *succubo* and *succuba* and the etymological sense of *incubo*, were invented to signify, or came to take on the meaning of, a carnal demon who visits a sleeping person, male or female, for the purpose of sexual intercourse, incubus being applied to the active and succubus to the passive rôle. It is this signification which the words have retained, it being only secondarily, for example, that incubus in English signifies a nightmare. The Greek correspondent of incubus, it may be noted, is *ephiattes*, one who leaps upon, the Latin equivalent for which would be *insultor*. Ducange, in his Glossary, gives us this definition: *Incubi vel incubones*, "a manner of devils who are accustomed to deal with women," and he goes on to quote from the Glosses on the medical works of Alexander of Tralles: "Incubus is that anguished feeling which sleepers have of being suffocated and weighted down by demons."

In any event, St. Augustine, for one, appears to have been firmly convinced of the existence of such demons, inasmuch as he declares that it would be a presumption to deny their reality (*ut hoc negare impudentiæ videatur*). This is in opposition to certain other Fathers of the Church, among them, St. John Chrysostom (Homily 22, on Genesis), who are doubtful on the point.

"Rumor commonly has it," says Augustine (*De civitate Dei*, xix and xxiii), "and many have experienced it, and others yet have had it on the word of those whose good faith is not to be questioned, that certain fauns or sylvan beasts, commonly known as incubi, have lusted after and have mistreated women, and have often sought to cohabit with them; and there are to be found, also, certain demons known to the Gauls as Dusii, who do all in their power to come at a carnal knowledge of women, and who not infrequently achieve their design."

An attempt has been made to associate this demonic commerce with Talmudic

lore, as based on the book of Genesis. The verse, Genesis, vi, 4, has been the subject of much speculation on the part of the demonologists: "There were giants in the earth in those days; and also after that, when the sons of God came in unto the daughters of men, and they bare children to them, the same became mighty men which were of old, men of renown."

A sample of such speculations is afforded by Balthazar Bekker, in his *Enchanted World*, published at Amsterdam, in 1694: "During the 130 years that Adam abstained from relations with his wife, there came to him female devils who became large with child of him, and who slept with devils, spirits, specters and nocturnal phantoms."

It would seem that, according to the demonologists, while devils or malefic demons were potent with women and might give the latter offspring, good angels, or spirits of the other kind, were practically without this power. This is indicated by the sixteenth-century Crespet, in his *De la Hayne de Sathan* (Paris, 1590). Crespet quotes the work of a predecessor, the *Antiques leçons* of Rhodiginus, to the effect: *Damones fœcundos esse femine, et coire, angelos vero bonos minime*. And he adds, on his own account: "Witches have frequently been found in lonely spots, lying on their backs and moving about as if in the venereal act, and at once, the devil was to be seen rising in the form of a dense and fetid cloud."

Such phenomena were once given credence by men of distinction. "Everywhere," Guibert de Nogent, whose own mother had been thus victimized, assures us (*De vita sua*, i, 13); "one comes upon countless cases of demons who make love to women and introduce themselves into the latter's beds. If decency permitted, we might relate many of these amours, some of which are truly atrocious in the torments which the poor victims have had to suffer, while in other cases the demons have been content with the mere satisfaction of their lust."

The incubi did their best to imitate a real-life gallant; some made normal love, while others were inconceivably perverse; and occasionally, the nether visitors would perpetrate the most prodigious bedroom feats.

As for the victim, she sometimes suffered the tortures of the damned, being filled with a loathing for herself as well as her persecutor; and sometimes, on the other hand, she came to be on quite friendly terms with the demon.

However all this may be, members of the clergy continued to accept the intercourse of devils and human beings as a fact; and in the middle of the seventeenth century, we hear the Reverend Father Costadau referring to the subject as one "too obscene to be expressed in our language" (*Traité historique et critique des principaux signes qui servent à manifester les pensées ou le commerce des esprits*, Lyon, 1720); but the existence of the phenomenon is not questioned. Allusions will be found, not merely in the demonologists, but in the works of many theologians, philosophers and physicians of the Middle Ages and a later period. Guibert de Nogent has been quoted. One might mention, also, Gregory of Tours, or the author of the life of St. Bernard, written shortly after the saint's death, or even the venerable Thomas Aquinas, who goes into the question at length (*Quæstio LI.*, art. 3). So far as that is concerned, a Pope, Innocent VIII, is to be found mentioning it in an apostolic letter:

Non sine ingenti molestia ad nostrum pervenit auditum complures utriusque sexus personas, proprie salutis immemores et a fide catholica deviantes, demonibus incubis et succubis abuti. ("To our great sorrow, it has come to our ears that many persons of either sex, neglectful of their own salvation and disloyal to the Catholic faith, have permitted themselves to be abused by demonic incubi and succubi").

The subject became, thus, one that concerned the confessional. It likewise figured in the Inquisition, in sorcery

trials and burnings at the stake. We have a pronouncement from Antonio de Torquemada on the theme: "The devil," he says, "endeavors to cause the sleeper to fall into the sin of lust, by making him dream of carnal pleasures until he is stained with pollutions; the result being that, while we delight in these dreams asleep, we perceive as soon as we are awake that they are for us the occasion of mortal sin."

It is accordingly to be expected that the casuists should occupy themselves with the topic. Their opinion is summarized by Bayle, in the *Réponses aux questions d'un provincial*: "Even those who are morally the most relaxed will agree that it is our duty to pray to God to deliver us from impure dreams; and that, if one has done things in the course of the evening which are calculated to cause pollutions in sleep, if one has no regret on the morrow at having taken pleasure in such dreams, or if one strives by artifice to cause them to return, in such a case one is guilty of a sin."

From the foregoing, it may be seen that there was a tendency to confuse the visitations of incubus and succubus with simple nocturnal pollutions and lascivious dreams of a sort that the modern Freudian would explain with theories of wish-fulfilment, infantile retrogression and the like. Particularly Freudian-sounding is the allusion to what the dreamer may have done in the course of the evening, before going to sleep. Tales of demons were no doubt often told around the fire at bedtime, and from infancy, most persons had listened to such accounts, had perhaps been frightened as children, or in some way had had the subject deeply impressed upon their minds. And where the patient of to-day might have recourse to a psychoanalyst, the victim of a satanic lust was treated by means of exorcism. The two processes were not so different as may be imagined; it is, indeed, interesting and instructive to compare, for instance, the signs of demonic possession recognized by the

exorcists with the various symptoms of Freud.¹

There is disagreement among the demonologists as to the demons' amorous predilections. De Lancré (*Tableau de l'inconstance des mauvais anges*) asserts that they leave virgins severely alone; but this is flatly contradicted by Bodin (*Démonomanie*). The former would explain the evil spirits' distaste for the pure, by quoting a maid who said to him: "The devil is not used to having relations with virgins, for the reason that, with them, it is impossible for him to commit adultery; and so, he waits until they are married."

Nevertheless, numerous cases are related by the demonographers of the devil's having corrupted young girls, even those before the age of puberty; these were usually witches' daughters, who had been devoted from birth to Satan and all his works. Bodin supplies an instance here, that of Jeanne Herviller, of Verberie, near Compiègne, who, as her mother had been before her, was condemned by the Parliament of Paris to be burned alive. Jeanne confessed that her mother had made her acquainted with the devil, whom she described as "a big, black man, all dressed in black, booted and spurred and with a sword at his side and a black horse at the door." The girl was twelve at the time. After that, "the devil slept carnally with her, in the same sort of way that men do with their wives, the only difference being that his semen was exceedingly cold. This occurred every week or so, while she was sleeping beside her husband, and without the latter's being aware of it."

It is Bodin, too, who reports the case of the Spanish abbess, Madeline of the Cross, victim from the age of twelve of an evil spirit "in the form of a blacka-

¹ See *Discours des marques des sorciers et de la réelle possession*, etc., par Jacques Fontaine, Paris, 1611; *Traicté des marques des possédés*, etc., par P. M. Esc, docteur en médecine, Rouen, 1644.—For the phenomena discussed in this article, it will be of interest to consult Hudson's *Law of Psychic Phenomena*.

moor," with whom she had had relations for thirty years. The abbess went to Pope Paul III to seek absolution. "It is my opinion," comments the demonographer, "that she was dedicated to Satan from her mother's womb, for she confessed that he had appeared to her from the age of six, which is the age of knowledge for girls, and that he had seduced her at the age of twelve, or that of puberty." Not all of Satan's victims repented, however. There was one Spanish girl who had been deflowered by him at the age of eighteen, and who went to the stake rather than turn penitent.

Another point of disagreement is as to whether or not the demons are addicted to sodomy and bestiality. Del Rio (*Controverses et recherches magiques*, etc., French translation, Paris, 1611) states that they abhor such practices, while others would have it that these perversions are the devil's own invention.

Two kinds of incubi were recognized, the hot and the cold. Torquemada, in his *Hexameron*, gives an explanation of the former: "However great enemies of humankind the demons may be, it is not so much with the desire to do evil that they enter human bodies as from a longing for a revivifying warmth; for they are those who dwell in the deepest and coldest places, where the cold is so pure that it is free of all humidity, and it is for this reason that they seek out warm, damp places."

But in spite of this, it was by a sensation of preternatural bodily warmth on the part of the victim that the demon manifested his presence or heralded his approach. Del Rio reports the case of St. Angeline of Foligno, who, as the devil drew near, felt such a "fire" in her organs of generation that, as she put it, she was forced to "apply a material fire (that is, a hot iron) in order to extinguish the flames of concupiscence."

In such cases as those of the Spanish Madeline and the Italian Angeline, the element of a religious hyper-sexuality, as with St. Theresa and others, is so pronounced as to call for no comment.

Though the demon's approach may have been warm, his actual embrace was invariably marked, at some point if not throughout, by a feeling of cold and horror inspired in the accessory. In the *Démonomanie* of Bodin, there is an account of a young woman who one night was conducted by her own mother to a meadow, where a number of witches were assembled. She found there "six devils, of human form but very hideous to look upon." The account continues: "When the dance was over, the devils lay down with them (the witches) and had intercourse with them; and one of them, who had danced with her (the girl) kissed her twice and cohabited with her for the space of more than half an hour, but his semen was very cold." This stress on the frigidity of the semen will be found repeatedly.

An opinion current among writers on the subject, one for which they alleged the authority of St. Thomas Aquinas, was, in Bodin's words, "that those demons known by the name of *hyphialtes*, or succubus, are in the habit of receiving the semen of males, and that they then make use of that semen in their intercourse with women, under the form of the *ephiates*, or incubus." The author just quoted would see, in such intercourse, that giving of one's seed to Moloch which is spoken of in the Old Testament.

Another unmistakable stigma of the Evil One was the horrible odor he brought with him, in which has been seen the origin of the expression, "to stink like the devil." This odor was communicated to those with whom he consorted, who were in turn recognizable by their fetid breath (cf. the modern advertising man's "halitosis"). Here, once more, may be seen an attempt to explain by a supernatural and diabolic agency a natural erotic phenomenon, namely, that sexual repulsion exerted by foulness of breath.

"Women," observes Bodin, "naturally have a sweeter breath than do men; but through intercourse with Satan, they become unnaturally foul-

breathed, ugly and repulsive." This stench was a common attribute of witches, who were, in a manner of speaking, the Devil's brides, as is indicated by certain epithets which were applied to the ladies of the broomstick, like the *fetillères* of the Gascons (Latin, *fæ-tentes*).

As remarked above, the intercourse of the Devil with a flesh-and-blood woman was capable of bearing fruit, which was supposed to be Satan's way of populating the world with monsters. This belief served, at any rate, to explain the birth of freaks. Such was the assigned source of the German *Wechselkind*, or changling child. These *Wechselkinder*, not infrequently, while thoroughly emaciated, were yet heavier in weight than ordinary children, and "could drain a nurse dry without taking on any fat." Martin Luther alludes to this, in his *Tischrede*. The reformer was himself accused of being a Devil's progeny of this sort. With the *Wechselkind* may be compared the French *champi*, or "child of the fields" (i.e., a foundling).

The author of the *Démonomanie* provides us with a vivid description of one of Satan's sons, whose mother was a sorceress: "a hideous monster, without head or feet, with a fiery-red mouth situated on the left shoulder, which set up a terrible clamor when it was washed." And he adds: "Other sorceresses beget devils in the guise of children, who have copulation with witch-nurses; and what becomes of them after that is often a mystery. As to such copulation with demons, St. Hieronymus, St. Augustine, St. Chrysostom and St. Gregory the Nazarene hold, against Lactantius and Josephus, that nothing comes of it all; but if something does come of it, it will be a devil incarnate rather than a man" (Cf. *Genesis*, vi, 4).

The Devil's children, however, were not unfailingly monsters. There was Guichard, the thirteenth-century Bishop of Troyes, reputed son of an incubus dubbed Petun, who was said to have made all the diabolic imps subject to his offspring. There was, on the other

hand, a popular tradition which had it that the Devil's children were succubi.

As to the distinction between incubus and succubus, this is made clear by Bodin: "The sorcerer who has copulation with the Devil as with a woman, is not an incubus or an *ephialtes*, but a *hyphialtes* or succubus."

A number of tales of succubi are vouched for by the various writers on demonology. Bodin quotes Spranger, who was appointed by Pope Innocent VIII to conduct the prosecution of German sorcerers, regarding one enchanter who "indulged in such copulation in the presence of his wife and his companions, who saw him engaged in the act, without being able to make out the woman's form." There was the octogenarian sorcerer-priest, Benoît Berne, known to Pico della Mirandola, who "had had copulation more than forty times with one disguised as a woman, who accompanied him about without any one's being aware of it, and who went by the name of Hermione." Cardanus mentions another priest, aged seventy, who for more than half a century had had intercourse with a demon "in the guise of a woman."

All of this sounds very much like masturbatory hallucinations, and it was as an hallucination that even so weird and jumbled a mind as that of Cornelius Agrippa, the physician-astrologer, looked upon this alleged sexual traffic with the powers of darkness. His pupil, the physician Johann Weyer of Brabant, in his *De præstigiis dæmonum et incantationibus ac veneficiis* (1563), disposed of the matter admirably, by observing that "Those women who think they do what they do not do are the victims of hypochondria."

About the year 1636-37, a most interesting public discussion of the entire subject of incubi and succubi was held at Paris, under the direction of the famous physician, Théophraste Renaudot and the auspices, practically speaking, of the Faculty of Medicine and the French Academy. It was, rather, a series of weekly or semi-weekly debates,

lasting over a period of time. It is of interest to hear one of the skeptical men of medicine present, brushing aside the demonic, and defining the affliction—to which he applied the Greek term for nightmare, *ephaltes*—as “an impairment of the respiration, of the voice and of bodily movement, with an oppressive sensation, which conveys the impression as we sleep of some heavy weight upon the stomach.” It is true that, in becoming more technical, the speaker became involved in the usual cloudy medical terminology of his day, having to do with “vapors,” “humors,” “spirits,” etc., but his conclusion was on the whole unfanciful: the phenomenon in question was a morbid state, “which, being an effect of the natural faculties and of a vegetating soul, cannot be proper to the Devil, who is a pure spirit.”

Another speaker at the same session (the 128th, February 9, 1637) declared that “there is nothing supernatural in the incubus, which is no more than a physical symptom, marked by three things, namely, impeded respiration, retarded movement, and a voluptuous imagination.” He then went on to give a lecture on nightmares, their causes and effects, ending with the advice to those present not to sleep upon their backs. The sensual over-stimulation of the imagination, occasioned by an excess of spermatozoa, was likewise stressed as a causative factor.²

In 1725, a royal physician, M. de Saint-André, in his *Lettres au sujet de la Magie, des Maléfices et des Sorciers*, had this to say:

“The incubus most often is a chimæra, which has no basis other than the effects of a dream upon a diseased imagination. . . . Cunning also plays a part in the stories of incubi. A woman, a girl, a devout lady of good family, may affect to appear virtuous and hide her crime, by palming off her lover as a besieging incubus. There are succubi as there are incubi, and they commonly have no

more foundation than dream, a diseased imagination, and sometimes human cunning. A man who has heard tell of succubi fancies in his sleep that he is beholding the most beautiful women and having intercourse with them——”

From this, it is apparent that the intelligence was making its inroads upon mediæval superstition. The belief in nocturnal demons and their sexual prowess none the less continued to exist, especially among the rural population. Voltaire and his kind might laugh, but the peasant believed. One of the countries in which the superstition was strongly entrenched was Scotland. The old Scottish historian, Hector Boece (*Scotorum historiæ*, Paris, 1575; first published 1527) has more than one tale on the subject. One of these may be given as retold by Le Loyer, in his *Discours et histoires des spectres*, etc. (Paris, 1605):

“In the same island, up toward Scotland, there was a lass who became pregnant with the devil. Her parents were quite unable to understand it all, for she had always shown an abhorrence for marriage. She thereupon confessed that it was the devil who slept with her every night, in the form of a handsome young man. The father and mother were not satisfied with their daughter’s explanation, but had themselves let into her room of a night, with torches in their hands. It was then that, in their daughter’s bed, their eyes fell upon a horrible monster, having no human likeness. The monster showed no inclination to leave, and so they sent to have him exorcized. At last, he fled; but it was with such an uproar and a hullabaloo that it shook all the furniture in the room, and as he went out, he took with him the roof of the house. Three days later, Hector Boece says, the young sorceress gave birth to the most hideous creature that ever saw the light in Scotland, and the midwives promptly smothered it.”

Another yet more curious anecdote from Boece is thus re-worded in the *De la hayne de Sathan* of Crespet:

“In the year 1486, a number of merchants sailing from Scotland to Flanders were suddenly assailed by a frightful tempest, which threatened to send them straightway to the bottom of the Ocean. Dark, heavy clouds lay everywhere, the air was like a weight, and the sun had lost its light. Now, they suspected that, in all this, there was Satan’s wicked hand to be seen, and this reflection served to cast

² See *Recueil général des questions traitées es Conférences du Bureau d’Adresse*, Paris, 1656, 5 vols., 8vo.

them into the depths of despair. Aboard the vessel, it happened that there was a woman, who, upon beholding the plight they were in, had pity of their terror, and at once began upbraiding herself and confessing her sins. She confessed that, for long, she had been the prey of a diabolic incubus who occasionally came to torment her; and she told them, there was nothing to do but be rid of her, begging them to throw her into the sea, as she felt deeply guilty for so horrible and infamous a crime. But there were aboard a number of good Catholics, and among them, a priest, who straightaway took her aside and shrived her and put her in a state of better grace, as she, out of the bitterness of her heart, and with many sobs and tears, threw herself upon God's mercy. She was then given sacramental absolution, and no sooner was this done than those aboard saw rising up from the ship a dense cloud of smoke accompanied by flames, which speedily made for the bottom of the sea, and calm once more reigned over the surface of the deep."

According to the tales told by certain of the possessed, the Devil took the form of a he-goat, with his virile member in the rear, "and had carnal knowledge of women by wiggling and pushing it against their front parts." Others stated that it was his habit to approach pretty women from the front and ugly ones from behind. The point of agreement was the frigidity of the satanic semen, though the visitor sometimes took pains to conceal this.

S. P.

INFAMOUS FINGER. The name given by the ancients to the *digitus medius*, or middle finger, by reason of the phallic connotation which had come to be attached to it. Among the Romans of the Imperial era, this seems to have been due to the employment of the finger in the *signum infame*, in which the upright middle digit, given an obscene motion, represented the penis, while the other closed fingers stood for the testicles (See Suetonius' *Caligula* and Lamprius' *Heliogabalus*. The *digitus infamis* will be found mentioned in Persius, ii, 23).

The Greeks had a similar feeling about this member, upon which they declined to put a ring. They applied to it the epithet of *catapygon*, or lustful. It was the middle finger which rustics

made use of, when they wished to ascertain whether or not there were any eggs in their chickens' bellies, an act for which the verb *skimalizein*, of unknown etymology, was coined. With Roman homosexuals, the extending of the middle finger signified an invitation, and was also employed by way of response. The same finger, incidentally, was used by combatants to signify submission.

Martial (vi, 70, 5) speaks of the *impudicus digitus*, or "immodest finger," and has a bit of advice on the subject. "Be sure to mock," he says, "him who calls you *cinaedus* and offers you his middle finger." And Seneca (*Epist.*, 52) observes: "What distinguishes the immodest one is his gait, the movement of his hand, the finger which he brings to his head (to scratch it) the blinking of his eyes." This, by the way, is not a bad description of the exaggerated type of homosexual of any age. The scratching of the head would seem to have replaced the elevation of the middle finger out of the closed hand. Juvenal (ix, 133) exclaims: "Behold pouring into Rome from all sides, in chariots, on vessels, effeminate who scratch their head with a single finger." In short, the homosexual employed the finger, where the courtesan commonly made use of her eyes.

The middle finger continues to have a significance for homosexuals to-day, at least American ones, as the present writer has discovered. It is believed that if the tip of that finger is brought down to the farthest point it can possibly reach on the palm of the hand, the distance from that point to the tip of the finger when extended will give the length of the penis.

INFANTILE SEXUALITY. Year by year there has been a markedly increasing absorption in the study of the behavior of the human being in its earliest years. All of its phases have gradually come under careful observation. Much has been learned, forgotten, relearned, again forgotten. One has only to try to look back into one's own infancy and early childhood to realize how universal is this individual forgetting. Such individual memory losses are reflected in adult attitudes, prejudices and biases

and the almost universal lack of memory of one's childhood is correlated with an equal ignorance of what is really going on within the child's mental activities.

It is only within comparatively few years that the reasons for these restrictions of memory and therefore the infinity of rationalizations about child behavior have been realized and are on their way to more sensible understanding. That which causes us to forget about ourselves as infants also brings about our ignorance of infant life in general. The mental mechanisms involved in these collateral or parallel processes of forgetting and ignoring will be discussed later. They are important since nothing is really ever forgotten. Experience lived through, leaves its engrammes cut into the living substance of the human being, of all living things in fact.

One has only to read Semon's observations in his masterly work on the "Mneme" (Memory) to realize how fundamental is this process of the cutting of experience into protoplasm. It is the first step of the memory process and constitutes one of the stages in the formation of habit or the process of repetition, which in living matter may become almost as fixed as the stars in their course. As a matter of incidental interest it may be more than surmised that these "repetitions" were the striking occurrences which led the ancients into their astrological conjectures, the thinly diluted bastard descendants of which have exercised and still obtain a widespread influence among human beings. It would have been impossible in those ancient days to carry out the exact type of experiments that Semon carried out to show the influence of memory on the behavior of living things, chiefly plants.¹

Semon was not the first or the only one who noted these remarkable recurrences of events. Homer, Pythagoras, and Heraclitus spoke of them in terms

of "flux"; also Aristotle whose "nutritive soul" had a remarkable resemblance to what physicians have called the Wisdom of the Body, these and many more had observed and have written upon these matters of unconscious memory. In modern energetic terms however, the history of psychological science puts the more recent work of Hering, Mach, Samuel Butler, Semon, Bergson, and Bleuler into the front rank on this question of memory of which Semon's may be said to be that best founded in actual experimentation; that of Bergson most fascinating and alluring.

Semon's conception of the "mneme"—and we utilize it here since we wish to show later that the infant is not in reality an infant mnemically speaking—is that all organic phenomena of reproduction, repetition of bodily form or of dynamic experiences are expressions of one and the same energetic process. These mnemonic phenomena are something more than the repetition to be observed in the inorganic world. They represent reproduction or repetition in which the new conditions are never quite the same as the original ones.

This Semon expressed by the word "Engram." When living substance is being acted upon by outer and/or inner influences, physico-chemical changes of varying degrees of arrangement take place in the bioplasm. Subjectively, or psychologically, we speak of them as "sensations." All living things behave much alike when brought in contact with harmful stimuli. They flee in some form or other; practically, man is the only living organism that can tell about it, and then only when he has grown to a certain stage in his development. Previous to this his behavior may closely parallel that of simpler organisms; simpler meaning earlier in the evolutionary scale of development.

The excitement or stimulus producing the physico-chemical changes, reversible or irreversible, is an energetic process which, initiated through a variety of stimuli entrances (receptors) may manifest itself in many different ways.

¹ Richard Semon, *The Mneme*; translated by Louis Simon, 1921.

Something within the bioplasm has been altered by the excitement. An "Engram" has been formed. An experience has been "engraved," written in. These stimuli rarely come alone, neither do they enter one receptor only or travel in single pathways. A simultaneous engram complex is produced; this is but the foundation of the so-called Gestalt or Configurational Psychology of the Berlin School.

The "mneme" is the phyletic memory pattern of experience passed through in the history of living matter. It is naturally complex to that degree that organisms have evolved and been capable of utilizing more and more energy of the universe—the cosmos—about and in them. Man, in this sense, represents the acme of this time-binding process. From this standpoint then the infant comes into the world already much determined as to his ultimate patterning, structurally and functionally.

When the spermatozoon fertilizes the ovum, the amebic stage in life history begins, figuratively speaking. Yet the human gonadal products, the genes within the chromosomes already contain the possibilities (entelechies, I take it is Aristotle's term) of repeating, reproducing, in structure and function the successive phases and structures that experience had fashioned in the advance from *Protozoon* to *Homo*. The fetus then, chronologically speaking, a minute, a day, a week or nine months old, in terms of his life-bound entelechies—i.e., capacity for completing and perfecting a pattern—is a billion years old. The wisdom of the leucocyte then is no careless figure of speech, nor is the child's mnemonic inheritance just a glittering, mystic phrase.

This article deals with the sexual aspect of this mnemonic inheritance. It builds upon the cardinal fact that life begins, so far as human beings are concerned, in a sexual process. Without such a sexual process there can be no human life, nor much life of any kind, save in a few isolated examples which are of little practical significance for hu-

man beings. Even with the apparent exceptions taken into account it may be stated that through the sexual mechanism life and evolution alone became possible. Potatoes may make copies of themselves without a sexual process (called budding) but they are always repetitions of the old potato. If the horticulturalist wishes to make a "new" potato, he must use the stamens and pistils, i.e., the sexual apparatus of the potato. Hence the history of the various manifestations of the sexual process is the most momentous fact in living matter.

At the same time it is the most encyclopedic fact in nature. Everything that the oak tree has, came from the acorn; everything that man has or does, came from the union of the spermatozoa and the ovum. The function of these is the reproductive or creative function. Therefore the unassailable conclusion, that creation, in any and/or every form, cellular, bodily, physiological, psychological and/or sociological utilizes the energy of the engrams of the sexual process. For convenience in speech the Greeks called this the work of Eros. In modern psychoanalytic psychology Freud has utilized the term libido. In this article then the term *libido* is to be understood as a convenient technical term or intellectual tool which stands for the energy of creation in any and/or every form.

Libido stands for a functional conception, in a manner analogous to electricity. It causes things to perform. It is known by its effects. In the human being the libido is capable of producing a great diversity of manifestations, according to the age (time aspect) of the individual and the amount involved, for as a symbol of creative energy one of the most interesting aspects of the libido is its dynamic one.

Thus while the fetus is growing the libido is entirely occupied in the development of the organs of the body. The libido investment in the growing tissues is 100%. It is entirely involved in the self, in the *Me*. The *Me* is organically

attached, i.e., inseparable from the mother through the placental connections. Hence the only object of libido investment of the fetus is itself and which is identified, if identification may be conceived of as a psychological process, with the mother.

This attachment to, identification with and libido investment of the mother in the fetal life which in everyday chronology reckoned as 10 lunar months, 40 weeks, or 280 days, as has already been pointed out from the standpoint of recapitulation, is a billion years. Just as a billion years of time experience is bound up in form, so is it as old functionally. Hence the enigma, the mystery and the majesty of Life and the fascination involved in man's unremitting search for understanding of what for the most part has been conveniently summarized by some as the ways of "God," by others as the science of biology.²

Psychological science must turn to the study of lower animals if it would hope to get a glimpse of the psychological processes presumably going on in the fetus. These however are not involved in this discussion further than in their mentioning.

Throughout the billion years of life's experience with the forces of nature about it two destinies awaited it—that of continuance or that of a return to the inorganic sources from which it is assumed it sprang. Bergson³ speaks of "life having insinuated itself into dead matter." Just how this took place, maybe is taking place, somewhere, somehow, also does not concern us. Suffice it to record then that these two major destinies of experience in living organisms, entitled "*Life*" and "*Death*," are old patterns of behavior and many a secret is locked up in them.

The libido is constructively, evolutionarily attached to life and its con-

tinuance. It functions whenever that which makes for immortality is operating, whether that operation takes place at the structural, the physiological, or the socio-psychological level of activity. It may fuse with the patterns of destruction, thus bringing death more quickly or more certainly, or it may operate independently and fend off the death instinct or processes.

Thus life has its opposite phase. "As in Adam all men die," as the psalmist sang it, so all living things go through a cycle and end in death. That which in a sense corresponds to the selfsame song—"Even so in Christ shall all be made alive"—so the processes of reproduction have conquered racial death through the sacrifice of individual death. Yet the individual goes on in the race through the mnemonic inheritance of the genes.

With birth there is a gigantic break with the past. The infant is no longer a part of the mother. He breathes himself, not through his mother's oxygenated blood. The bond of attachment is broken, but the identification with and libido investment of the mother continue. The first known stages of what may be called "infantile sexuality" become objects of recognition and the earliest forms of sexual adaptation become observable. The male and female, so different inside, i.e., through heredity or gene organization, are for a time identical so far as the processes of identification and object libido investment are concerned. Much of the organ libido⁴ investment is free for other than purely growth purposes although such investments are still highly important for the growth of still

² Consult von Monakow et Mourgue. *Introduction biologique à l'étude de la Neurologie et de la psychopathologie*. Paris. Felix Alcan. 1928. Also in German.

³ Henri Bergson, *L'évolution créatrice* (1907); in English translation.

⁴ The author here avoids the word *cathexis* so widely used in psychoanalytic terminology, not that catharsis and cathexis, discharge and loading are not excellent terms but, as more or less foreign to every day use, the words investment, or load are preferred. Libido investment, or cathexis—the load or charge or amount of energy involved. In physics these loads are defined in fixed standards, pounds, kilowatt hours, volts, amperes, etc. Psychophysics would attempt similar unitary conceptions (Fechner's Law, etc.) but as yet this is not possible.

undeveloped organs, the brain in particular.

The oldest observations of animal behavior have crystallized into the formula that "pleasure and pain," as feelings, correspond in a very general sense to "life and death," as processes. Hence when it is said, and the principle rigorously followed out, that the child at first follows the "*pleasure principle*," it is carrying out only what it has experienced for many aeons within the mother's body. Outside however new adaptations are required. A new principle has to be assimilated; this in psychoanalytic terminology is the "*reality principle*."

So identifications commence to shift, or be displaced—and libido investments become divided and distributed—now here, now there, a little somewhere else. The respiratory libido has been mentioned. Its careful analysis in its infantile form is still a desideratum. Infantile breath holdings through resentments and a host of anoxemic producing situations (infantile convulsions, etc.) are of enormous importance. If primarily the medical and social sciences are to understand more about the functional adaptive value of speech in ordinary conversation, in rhetoric, political humbug oratory, in poetry, prose or the drama,⁵ the infantile sexual connotations of breathing must be studied. So also the pathological directions taken in stuttering, in asthmas, and even in tuberculosis,⁶ a major scourge of mankind may be better comprehended. Respiration and aspiration are related processes at different libido investment levels.

The study of the mouth pleasure seeking is much more direct and easier, hence its recording in great detail in recent studies of the sexual pleasure connected with sucking in the infant. In the earliest days of the infant's life the breast is not something apart from the child. Like the mother's body the

stage of identification separation has not yet taken place. The child cries—and is fed. The cry is the symbolic expression of the infant's ability to command, its *Omnipotence*. In infinitely varying degrees of manipulation the cry continues the power function; the present-day "radio" and "talkie" are pertinent to this study of power expression for good or ill.

The child's thumb or finger is among its earliest bridges from primitive autoeroticism (primary narcissism—organ libido) to the reality principle. Here again as in the respiratory cycle, the mouth pleasure cycle develops a rich branching of object libido searchings, chiefly through food producing, distributing, and consumption processes.

Respiration and feeding are on the intake side of the child's activities. There are also outgoing needs and pleasures. A physiological activity is pleasurable and attaches to itself a libido investment. The child must and does urinate and enjoys it; often too much and for too long a period of years. The libido load, through identification and displacement from other areas may determine a host of urinary interests often of great value to society in later inventive hydraulic processes—irrigation, hydro-electric, etc., or in pathological and crippling psychoneuroses, psychoses,⁷ or organic kidney disease. The urinary zones are of special significance since in later developments of the sexuality they become the "genital areas" for the more or less complete and adult forms of sexual union with all of their social significances.

Similarly the zones involved in defecation are areas of need and of pleasure in the same sense as all other zones of the body. They too like all other areas of the body are capable of infantile sexual gratification. These are not the only areas of the infant's body

⁵ S. E. Jelliffe, *Psychotherapy and the Drama* (N. Y. Med. Jl. 442, 1917).

⁶ S. E. Jelliffe, *Psychotherapy and Tuberculosis* (Am. Jl. Tuberculosis, 417, 1919. With E. Evans).

⁷ Medical or otherwise interested readers may find illustrations in S. E. Jelliffe, *Psychopathology and Organic Disease* (Kidney). Arch. of Neur. & Psych. 639, 1922; and the same writer's *What Price Healing?* (Bladder neurosis). Jl. Amer. Med. Assoc. 1393, 1930.

capable of direct pleasurable sexual activity. By displacement and through identification every organ of the body can function sexually for another organ. Hence the older Freudian conception—polymorphous (many formed) perverse—(i.e., if continued into later life constituting what in technical terms is called a perversion). One has only to look through any collection of poetic expression to see how in higher, i.e., more sublimated forms, the different zones of the body are utilized as pleasure zones in the symbolically transformed sexual sense.

Inasmuch as the rectal functions are correlated very early in the child life with the dirty, offensive, bad, and denied, it may be seen how anal erotism, i.e., anal sexuality, is soon and also persistently subjected to very strong tendencies to displacement, to repression and to symbolic distortion and amplification. The feces themselves as objects of the child's earliest constructions are invested with libido.

It is no easy task to trace out the intricate and diverse patterns taken by the developing sexual impulses as they involve the anal erotism. For every single adult-developed perverse form of sexual behavior, as the ancient Hebrews have recorded in the Myth of Lot, his wife and daughters and the Cities of the Plain, Sodom and Gomorrah, there are literally thousands of minor or major manifestations of different quantities of libido investments, with or without fusions of the death instinct energies that make and mar life's patterns.

Similarly the infant's identification with what he first can make—his fecal gift—in return for mother praise, in its possible later symbolic developments of behavior in life both in their constructive and destructive trends afford fields of study of infinite diversity and complexity. Here building, making, giving, taking, power reaching, force compelling, sculpture, painting, money making, greed, miserliness, and all the forces of aggression, hostility, criminality, these

are but a mere dozen of the million aspects of life patterns in part or as wholes, that owe their special character formations to anal-erotism.

Mankind has wondered and marvelled at the infinite variety and shape of sunlight catching devices of plant life. Only since psychoanalytic study of the unconscious has psychological science been able to trace to its original source of energy investment hosts of mankind's most constructive bits of behavior as well as equal hordes of its most detestable characteristics, namely in the growing up, integration and elaboration of anal-erotic activities.

Up to the present stages here described there has been no pattern or formula in the infantile sexuality recognizable as to its later arriving and adult construction. Like an intricate "puss in the corner" game, the infantile sexuality shows itself as "polymorphous." It skips from one obtaining pleasure or zone area to another—i.e., "displacement" capacity is at its acme. Mother identification and investment is evident in both sexes. Separation of patterning is still in embryo.

Changes take place with the months. The coming of the teeth introduce a power, a pain inflicting capacity; the muscular force becomes greater. Muscle libido pleasure begins to be gratified with grasping, tearing, breaking. Destruction is a forerunner of construction.

Psychoanalytic observation is still estimating the age factor when the earliest clear cut formulation of later arriving adult sexual patternings take place. There is probably much individual variation here as elsewhere in life's processes. The interpretations of certain students⁸ of the problems seem to indicate the very early emergence of the Oedipus pattern apparently somewhat earlier in boys than in girls, although this is still in need of more careful study.

During the second year the boy's un-

⁸ Melanie Klein, *The Psychoanalysis of Children*.

conscious antagonism to the father begins to manifest itself and at the same time or slightly later the girl's oral erotism begins to show unconscious father-penis incorporation cravings. In both sexes castration fears, or anxieties or defenses begin to be set up as fore-runners of the more fully developed Oedipus patterning. The boy's unconscious mother craving defenses develop the more typical castration anxieties. The girl's desire to possess something that the boy, the father possesses, the penis, shows itself in oral incorporation activities. The frustration at the breast is partly compensated for by imaginary pictures of a substitute, which like the breast, will give its equivalent pleasure. It is only later that there is a displacement to the vagina for this "taking in" pleasure. The mouth, the eye, the hand, the ear, the stomach, the rectum are all primary "taking in" organs parallel to the mouth in their "introjecting" or "taking in" cravings.

The study of the child's play and other activities demonstrates this very clearly. Close observation shows how eye curiosity, ear listening, hand grasping, stomach greediness, bowel retention, etc., etc., indicate the various ways and places of pleasure craving. These are all capable of showing marked variations in "load," or investment, or cathexis, of libido.

They also offer opportunities for pre-vising later arriving character trends, habit formations and when very strongly loaded even may predicate later arriving neurotic or psychotic disease possibilities unless the work of "repression" becomes adequate to shunt or modify or bring about sublimation of the early patternings. Intensity of load has its ambivalent possibilities in all of these primary narcissistic settings. It may lead up or down for reasons fairly well understood in psychoanalytic theory, but difficult to modify and/or control in training practice. In these second and third years (Melanie Klein and others) or later third to fifth years (Freud's earlier formulation) the com-

plete Oedipus pattern comes into its own.

It would take an entire book to outline all of the nuances of the "Oedipus Complex" pattern of the small child. The reader is reminded that the proper evidence bearing upon the Oedipus Complex is to be found in the unconscious only. It cannot be judged by ordinary conscious criteria. To state that the little boy loves his mother and hates his father, or the little girl hates her mother and loves her father, in consciously observable behavior activities is rubbish. Yet this is the average criticism of the psychoanalytic conception. The young child in his play shows an enormous mass of behavior activities. It requires a wide and even more important, a deep insight into the innumerable identifications that the child makes in order to understand what is going on in the development of the sexual impulses.

Everything that surrounds the child is first felt as of pleasure giving or pain producing significance. Mother is first, as stated, everything in the pre-Oedipal stages of the development of infantile sexuality. Female receiving, intaking, retaining, submitting are then slowly separated from male giving, outputting, and demanding *Object* investment (mother-father prototypes) and *aim* craving (vagina-penis prototypes) become more clearly discernible in behavior. These activities are very soon intricately symbolized and very early lose their plainly understandable significance from the libido theory standpoint.

It is highly important to hold in mind that every small child shows ambivalent bisexual activities. The little boy who thrusts his fingers into every hole or crack he can find is showing at one time his preëminent thrusting masculine phallic craving, when in the very next moment he stuffs his mouth, or his pockets, or small receptacles with this or that, he may be carrying out his female vaginal identifications with their appropriate symbolic activities.

In the developmental march towards adult sexuality which roughly formulated states that the pattern requires male to seek female, and penis to find vagina with creative intent, one can observe in child behavior in gradually increasing intricacy of symbolization these integral parts of the later arriving fully developed pattern.

It is all important to remember that the mere use of the genitals (i.e., the arrival at a phallic or vaginal stage) such as in masturbation, or in copulation, does not signify the complete development of the human pattern. Even marriage, intercourse, childbearing does not fulfill the order. There is a progression beyond these for nest building, health preserving, educational unfolding, and complete socialization of the individual are advance steps far beyond the mere act of sexual union.

For the average individual the words sex and sexual are too narrowly interpreted as solely genital forms of activity. This is an infantile or imbecile judgment of the meaning of the work of Eros—or of libido. As stated in the beginning of this article, the libido is the equivalent of the *creative* energy utilized by the human being. Its "genital stage" is but an early stage in its evolution and development. The lowest forms of animals have arrived at this level of biological adaptation. Mankind has further more important aims for the creative libido. Popular language groups these under the broad term spiritual. Sociological science the discipline of ethics; the entire range of the "Geistes wissenschaften," mental sciences, the arts, literature, politics, business, in fact each and every activity of which human beings are capable, from their least to their most valuable, their lowest to their highest, all involve the energetic association of the libido.

Thus far this sketchy outline has stated nothing about the processes by which the body controls, directs and renders valuably adaptable this titanic force of the libido.

In the metaphor of an internal combustion engine—an automobile for instance—only the energy of the gasoline and its oxygen mixture,

and certain organs whereby the engine moves, have been discussed. These are essential parts of the machine and of its functioning. There are, in human beings as in the automobile, other parts which are equally essential. To continue the metaphor a bit further, we have attempted to show only certain early developmental forms of the human being's activities, just as in many an Exposition one finds the early forms of the automobile and its parts and its evolution and development. So here only certain aspects or phases of human sexuality have been discussed, namely the infantile sexuality—or that stage up to and starting with the Oedipus complex patterning—roughly from fertilization to the age of 3-5. During these years and following thereafter there follows a gradual modification of the "Oedipus Complex." The primitive unconscious "incest-murder" pattern passes⁹ or modifies to later models.

This short sketch would be incomplete without some mention of the mental mechanisms, processes, or happenings which bring about the passing, modification, or unfoldings of the Oedipus Complex and the gradual adaptation of the child to the reality principle and his growth into adult socialization. In rough automobile terms, something about the steering gear, the brakes, the rules of the road and the map. What factors make a good driver? What a bad one? In human engineering in what manner is the libido utilized so that the individual becomes an asset for the world and/or what are the factors that make for poor character formation, obsessions, phobias, fanatics, criminals or many chronic bodily illnesses?

Again nothing short of a book, yes, even a library would be needed to set this whole story down. Only the barest skeleton in most general terms can be sketched.

The most primitive of races learned that certain objects of the environment could be trained. Plants could be made useful by care and attention; animals likewise, and thus arose agriculture and the farm animal cultures. So with children. How could purely individual wishes and cravings (autistic) become so modified that coöperation became effective and a family, a society became possible. It is not the object of this article to discuss this in detail. The literature already available is voluminous.^{10, 11}

The essential feature to be constantly kept in mind was the life force, called by different names. In this article, that part of the life force spoken of as the libido is the essential impulse upon which all the forces of civilization and culture must operate. As the child

⁹ S. Freud, *The Passing of the Oedipus Complex*.

¹⁰ E. B. Reuter and J. R. Runner, *The Family* (1931).

¹¹ A. Goldenweiser, *History, Psychology and Culture* (1933).

grows older a part of its functioning—mental if one will—begins to separate the *me* from the *not me* (primary identification) and the animistic, magical wish fulfilling “omnipotence of thought” (pleasure principle in primary narcissism) begins to be thwarted (reality principle). A new institution develops in the child’s body, chiefly having its central connections in the nervous system and finally in the brain. Through experience, contact, etc., the world of reality is slowly built up and a conscious perceptive system emerges which in psychoanalytic terms is spoken of as the Ego.

This “Ego” is not to be confused with the popular term “Ego” which may stand for the self, one’s conceit, one’s individuality, etc. The psychoanalytic “Ego” is something that unfolds, emerges with growth, just as the organs of the body have unfolded and developed. The study of its different stages, from the purely wish fulfilling omnipotence of thought stage of primitives and of infancy, when, as in the latter, the cry brings comfort, i.e., invokes the pleasure, is as wide as the world. Little by little this ego grows, accompanied by development in the cortical growth in the brain. This ego becomes the “reality tester”; develops language, and becomes the outstanding feature of human development. In the automobile metaphor its analogies are the driver, the steering gear, the rules of the road, the knowledge of the road map. At the same time that the ego directs the libido, or makes its utilizable, it can also put a tension of restraint upon it. It can consciously suppress libido impulses and also unconscious repression can operate to still further check the more primitive, narcissistic infantile sexual gratification of cravings in their asocial, antisocial or unreality forms.

It would be a poor automobile whose only controlling mechanisms would be a good steering gear or knowing driver and/or a well adjusted accelerator. The car has brakes. So also has the human machine. The Ego supplies one type of brake. Through suppression and repression some control of libido drives are effected, but they are not enough, any more than the foot brake is the only brake on a car. A hand brake which jerks the car up short is added. In the human machine, to pursue the crude metaphor already employed, there is also a hand brake. In older psychologies and popular speech it was known as Conscience. In the scientific terminology here followed, it is known as the Super Ego, which like the Ego, has a rich and complicated development which may be said to even antedate the development of the Ego.

It starts with unconscious defense reflex actions possibly. Then it builds on the examples of its parents. Through the ideals of its childhood surroundings; father, mother, the does and the don’t; the permissions and denials,

the pleasures and pains, the frustrations of the pleasure principle take hold and the Super-Ego becomes an important mechanism for the repression of the energy of the libido impulses. Religion and theology have much to say about Conscience, but they do not analyze its component parts or tell us fragmentarily only a bit of its genetic development. Infantile sexuality through the material processes of growth, the repressions of the Super Ego, the repressions and suppressions of the Ego, unfolds and develops into the creative socialized individual—still a very imperfect being but on his way.

According to an ideal program, as here outlined, with a strong well-defined Super Ego and an integrated and cultivated Ego there should be no trouble in the world of human beings. This however is far from the facts. In reality it would seem there was nothing but trouble. Trouble has been man’s lot before, with and after Job’s classical and metaphorical boils. How can this be in terms of the outline here? Again a word—“regression”—has to be introduced. Like the driver who is not looking, or sees things different from what they are in reality, the suppressions or repressions let up a bit and the libido may slip through in primitive or more infantile forms of pleasure seeking; or the brake bands are loose or slippery and the foot brake does not hold, the hand brake is ineffective and suddenly the individual is in a mess in a minor or major asocial, unsocial, or antisocial situation.

It would lead too far to attempt in this article to show what innumerable highly complicated compensatory devices the human being has contrived to handle the minor or major inadequacies of his Super Ego and Ego processes. The literature of the world in time and space has recorded these happenings in their mythical, romantic, realistic, technical, or other forms. The poets have sung of the joys and miseries. They have been rich in creating the infinite variety of words (verbalized Ego expressors) for delivering the infinite shades of feeling of pleasure and pain. The philosophers have collected and integrated and synthesized human experience, seeking in reality for a better and yet analogous grasp of the universe than the infantile omnipotence of thought. The physiologists through experiment and detailed research have followed to their inner sources the body’s activities.

“Some day,” wrote the French physiologist, Claude Bernard, “the poet, the philosopher, and the physiologist will speak the same language and understand each other. When that day arrives a true science of medicine will have arrived.” In short, mankind will be able to be uniformly and consistently healthy. His infantile sexuality will have become grown up, uniformity developed, and adult adaptive socialization will have been reached.

S. E. J.

INFIBULATION. The word infibulation, from the verb *infibulate*, which may be derived from the Latin *infibulare*, has been applied to a variety of different processes and states, some of which have no relation whatever to that originally implied by the word.

The Oxford Dictionary explains the English word *infibulation* thus. "n. of action f. INFIBULATE v., perh. after F. *infibulation* (16th c. in Godef.). The action of infibulating; spec. the fastening up of the sexual organs with a fibula or clasp."

The earliest reference in English may be that in Bulwer's *Anthropometamorphosis* (1650, p. 202), where it says that the art of infibulation is the "buttoning up the prepuce with a Brasse or silver button," a description which hardly gives a clear idea of the operation.

The basic idea in the practice is the *fastening* up with a clasp, fibula or buckle, and in the course of time the word began to be applied to a specific operation whereby the genital organs, or rather a part or parts of the external apparatus, were so fastened or secured that copulation was hindered or made impossible.

When somewhat similar customs and practices became known, the word was wrongly appropriated and used by archeologists and others to describe such customs as the tying up of the male prepuce with a band (*κυνόδεσμη*), which was reported among the people of Attica and which is represented on the vase paintings: the closure through prior excision of the vulva in females; and finally the word was, and unfortunately still is, totally wrongly applied to the condition of *phallus curvatus* as seen represented on the ancient monuments of Greece and Rome. In E. J. Dingwall's *Male Infibulation* (1925), many of these points have been fairly fully dealt with and a new nomenclature has been suggested. Here we shall confine our attention to two customs only. In the first place we shall consider the practice of attaching to

the male prepuce some device whereby the foreskin is prevented from slipping over the glans, thus hindering erection and copulation; and secondly we shall examine the custom of fastening together the lips of the vulva either by means of a ring, clasp or buckle, or more simply by sewing the labia together. In this section we shall not fully discuss other methods of causing the labia to adhere, which practices cannot properly be termed infibulation, although the word has often been used to describe them.

In ancient writings the references to infibulation are comparatively few. The fullest early account of the operation in the male is that contained in the work of A. C. Celsus (*De Medicina*, vii, 25, sect. 3) the first edition of which was published in Florence in 1478. It is in the section which treats of pharmacy and surgery that the operation is described. First of all the prepuce is drawn forward and marks are made on either side of it in such a way that, when it is released, these marks do not return over the glans. If this is tested and it is found that the marks are free from the glans then these will be the places where the fibula will be applied. After the prepuce is marked in the right places holes are drilled with a needle and thread, the two loose ends being tied together and run through the holes daily until these are healed, leaving only two little orifices on either side. The thread is finally removed and the fibula or clasp is attached which, according to Celsus, should be light in character.

The reason for the operation, which is said to have been performed on youths, was, according to Celsus, that it had an effect on the voice and on the state of the health (*interdum vocis, interdum valetudinis causa*). He gives no details as to the precise nature of the fibula, neither does he state at what age the youths submitted to it nor how it was thought to have an effect on the voice.

In order to answer these questions and to get a clear idea of the whole problem it will be necessary to examine other passages from the classical authors and to compare their remarks with what we have already learnt from Celsus.

The first question that presents itself is that relating to the fibula, and then we can pass on to the youths (*adolescentuli*) who suffered it to be applied to them and to the supposed effect that it had on their voices and health.

The origin of the word *fibula* (*fibla*) is not wholly clear but it is thought to be connected with the word *figibula* (*figo*). It is properly an article or device for fastening garments together, and it is in this sense that we find it employed in many classical authors. Thus Virgil (*Aeneid*, iv, 139) writes,

Aurea purpuream subnectit fibula vestem,

where the word obviously means a clasp or buckle; and Ovid (*Metamorphoses*, ii, 412) writes,

ubi fibula vestem.

Vitta coeruerat neglectos alba capillos.

where he quite clearly is speaking of some sort of clasp, and it is in this sense of brooch, pin, latchet, clamp or buckle that the word is most usually employed by the classical authors. In certain passages, however, the word is employed in a sense which is not quite that commonly used and it is in these passages that the custom of infibulating youths appears to be mentioned. In order to illustrate this rather different meaning we shall examine some of these passages and in doing so we shall discover the answer to certain of the questions which remained unanswered by Celsus in his account of the surgical operation.

In one of his Epigrams (xiv, 215), Martial asks to be told plainly why certain comic actors and cithara players wear the fibula: and the answer he gives is that by so doing they may be able to sell their sexual favors at a higher price. How this was possible

we shall learn after examining other passages.

Martial (vii, 82) describes an untoward incident on the gymnasium ground. It appeared that a certain Menophil, who was performing, was wearing an enormous fibula which was so large that it would have sufficed for all the comic actors put together. It was believed that the fibula was worn for the sake of preserving the voice but unfortunately it fell off in the presence of all the spectators and then it was seen that he was circumcised. It is clear from the passage that in this case the fibula was sometimes in the nature of a covering or sheath, and indeed in Epigram xi, 75 Martial practically concedes the point. He is writing of a young male slave and his mistress and the latter is asked how it is that her servant, who is neither a singer nor a cithara player, is accustomed to wear a bronze sheath (*theca*) when he is bathing. It is asked whether it is that she does not wish other bathers to see his member. In order to avoid jealousy the woman is advised to have this sheath taken off, and it is clear from the lines that here the fibula was like that worn by Menophil and consisted of a kind of tubular covering which concealed at least a portion of the penis.

From the Epigrams of Martial which we have quoted above it is clear that both singers and cithara players were sometimes infibulated; and moreover the custom was not unknown among slaves. In the case of Menophil it would appear that, wishing to conceal his Jewish origin, he had worn a kind of sheath, which might have been easily mistaken for a fibula, but which, having fallen off, revealed his circumcised penis and exposed the fraud before all the spectators on the gymnasium ground.

Another author in whose Satires infibulation is mentioned is Juvenal. In Satire vi, 73 the poet has been speaking of certain lascivious women and in the course of his lines he says that the

fibula of a comic actor is loosened only at a high price. Here again we find a hint at what Martial mentioned in Epigram xiv, 215 quoted above where it is said that the infibulated were able to sell their favors at a high price; and in Satire vi, 379 Juvenal writes that if a woman is musical not one of those singers who sell their voices to the praetor will hold out against her charms.¹ Upon this passage one of the old scholiasts observes that by the word *fibula* is to be understood the little rings which both tragic and comic actors wore on the penis to prevent them from having coitus and losing their voices. Similarly another commentator, Britannicus, states that the fibula was a very thin silver, gold or bronze ring: *annulus tenuissimus argenteus sive aureus sive aeneus*. (See Juvenal, *Satirae*, Lugd. Bat., 1695, p. 528).

Different opinions exist as to the precise meaning to be attached to the above lines from Juvenal. It is possible that the passage may mean that a fibula as worn by a musician never lasted very long owing to the restrictions it imposed; or on the other hand the Satire may be referring to a state of things that Martial mentioned in Epigram xiv, 215 quoted above. In the Satire with which we are dealing Juvenal is describing the practices of certain women and their expedients in regard to their sexual life. He speaks, for example, of women who have had slaves castrated and rejoiced in the freedom that they enjoyed with such slaves where abortions need no longer be feared. Here he deals with those women who are inclined to infibulated men, and it has not been understood how and why such persons were desired by lustful females.

The commentator Britannicus denies (see *Satirae*, Vincentiae, 1480) that such persons were loved by women, but there is no difficulty in understanding this, and later commentators are in

¹ *Si gaudet cantu, nullius fibula durat vocem vendentis praetoribus.*

substantial agreement on the point. It seems clear from the nature of the case that an infibulated man might well offer attractions to a woman since, when the fibula was removed, his condition might be expected to satisfy the most imperious demands made upon him. Although Britannicus did not hold this view, the commentator Calderinus (whose observations were published in the 1480 edition of Juvenal's *Satires* already quoted) held it and later writers seem generally to concur with his opinion. Thus C. Rambach in his *Thesaurus eroticus linguae latinae* (Stuttgartiae, 1833, p. 128) says that Roman women lusted after infibulated men since their condition insured potency when the hindrance was removed; and later authors hold the same view (see passages quoted in Dingwall's *Male Infibulation*, 1925, pp. 21 seq.).

It is in this sense of hindrance or restraint that we find the word *fibula* used in other passages. Thus Pliny (*Natural History*, xxxiii, 12 (54), ed. Janus, V, 157), when speaking of the uses of metal writes: "Jam vero paedagogia ad transitum virilitatis custodiantur argento," where it might seem that a fibula was intended, and it is also to be observed that it was said to be made of silver. Again in the *Priapea* (lxxvii, 21) we find the line:

Neve imponite fibulam priapo,

which is used as a kind of proverbial saying; and Pierrugues (*Glossarium eroticum*, Parisiis, 1826, p. 218) and Rambach (*Op. cit.*, p. 129; cf. J. Rhodius, *De Acia diss.*, Patavii, 1639, p. 57) are clearly right when they say that the expression *fibulam imponere* is a *formula proverbialis* meaning to curb the fires of love. Again it is with the same meaning that Tertullian employs the term when he writes:

Caeterum subvertit totam substantiam sacramenti causatio ejus modi; ut etiam voluntariis delictis fibulam laxet,

in which passage the word is clearly used in the sense of a hindrance or ob-

stacle (Tert., *Opera*, ed. Migne; *De Cor. Mûl.*, 11, ii, 93). The word is used in the same sense in Tertullian's *De Pudic.*, *op. cit.*, ii, 1011) and a similar interpretation can be applied to the passage in Lactantius (*Div. Instit.*, I, 16; ed. Migne, i, 203) where law "fibulam imposuit."

Before we pass on to later accounts it may be convenient here to summarize the conclusions to which we have been led from our consideration of the classical authors. Firstly then as to the meaning of the term *fibula*.

- I. The ordinary brooch or clasp which was used in antiquity for fastening garments together and which was also employed in surgery for bringing the open edges of wounds into contact (see J. S. Milne, *Surgical Instruments in Greek and Roman Times*, Oxford, 1907, p. 162).
- II. A small ring (*circellus*) which is mentioned by the scholiasts on Juvenal. This meaning can be compared with the use of the term by Celsus.
- III. A case or small sheath (*theca*) as used by Martial in Epigram xi, 75. In this case the covering was large, as in the case of Menophil we are told that it *penem vestit* (*Epig.* vii, 82).
- IV. Used in the sense of hindrance or restraint as we have seen in the case of Tertullian and in the Priapea.

Secondly as to the material of which the fibulae were made. It seems clear that they were made of metal and it is probable that gold, silver and bronze were employed. We have already seen that a commentator described a fibula as a very thin silver, gold or bronze ring.

We can now consider the purpose of the operation of infibulation whereby a fibula or ring was attached to the male prepuce.

- I. For preserving the voice. This is mentioned by Martial, Juvenal, the scholiasts and by Celsus.
- II. For the purpose of preventing copulation. In this connection we meet with the idea that carnal intercourse was considered harmful to the voice.
- III. For purposes of concealment. Cf. Martial's Epigrams vii and xi.

- IV. For the purpose of enhancing the sexual attractiveness of the wearer. This is mentioned by both Martial and Juvenal.

Finally we must inquire as to the people who suffered the operation. It would seem that these were usually young men and boys; and slaves, actors and musicians were persons who often submitted to the indignity.

Before passing on to a discussion of how infibulation was supposed to affect the voice we may pause to consider another account of the operation itself, which is preserved in the works of the medical writer Oribasius the Divine, who lived about A.D. 350 and who was at one time chief physician to the Emperor Julian. In discussing various diseases of the genital organs he mentions infibulation; and says that the person to be infibulated must be placed opposite the surgeon. First of all the skin of the prepuce must be pulled forward and then allowed to slip back. This should be repeated two or three times in order to ascertain what proportion of the skin normally extends beyond the tip of the glans. This having been done infibulation is practised. Some operators mark the prepuce at either side in order to guide them as to where to drill the holes. At any rate a needle through which is threaded palm fiber is passed through the skin at the right places and then the ends are knotted so as to form a kind of ring. The holes are subsequently enlarged by the thread being pulled back and forth and then it is pulled out altogether to be replaced by a small tin device to assist healing (Ed. Bussemaker and Daremberg, vol. iv, p. 475).

Unfortunately it is here that the MS. of Oribasius is defective and we learn no more of the course of the operation, but it is clear from what he says that the custom was well known in the fourth century and that surgeons differed as to the way in which they performed it. Later writers on surgery also made mention of infibulation and

Fallopio, in discussing the matter says that in his day it was scarcely necessary to infibulate to restrain lust as the *Morbus Gallicus* was quite a satisfactory deterrent! (*Opera*, Venetiis, 1606, tom. ii, tract. 2, cap. 7. p. 277).

We must now pass on to examine the question of what actual effect infibulation had upon those submitting to it; and also discuss the problem of its supposed effect on the health and the voice.

It is clear from the accounts of the operation left by Celsus and Oribasius that the immediate effect of infibulating the prepuce was virtually to cause an artificial phimosis. Once the ring was affixed it was impossible for the prepuce to slip over the glans and erection became, if not impossible, sufficiently unpleasant to be avoided. Copulation also was thus rendered impossible and a forced continence ensured. Thus, although the wearing of the fibula could not in itself have any effect on the voice, yet, if it were thought that chastity had a good effect, then infibulation, by making chastity forcible, would indirectly have the effect on the voice that was desired. It will be necessary, then, if we are to understand the meaning of infibulation in antiquity, to examine the question of whether or not, in the words of Fallopio, "Venus corrupts the voice."

For a discussion of this question we have merely to turn to Aristotle. In his *History of Animals* (vii, 2) he speaks of the growth of man and of the changes that the voice undergoes at puberty, remarking on the strange alteration of tone which takes place in males; and then he continues by remarking that this breaking of the voice is more obvious in those who are testing their sexual capabilities, for among those who are wont to indulge the sexual appetite the voice changes to that of a man, which is not the case among those who restrain themselves and remain chaste. If, Aristotle continues, a young man endeavors to de-

lay his voice breaking, as some musicians do, then it may remain unbroken for some time; and even stay in that condition with but very little difference in tone.

This opinion of Aristotle regarding the effect of chastity on the voice was widely held in antiquity and we find many references to it in later writers who mention infibulation. Thus Riolanus whose *Anthropographia* was published in Paris in 1626 says (p. 303) that musicians were infibulated lest Priapus, by becoming active, might injure their voices. Similarly Holyday in his edition of Juvenal (Oxford, 1673, p. 110) has a quaint passage on the matter:

"*Fibula* signifies not strictly a button, but also a buckle, or clasp or suchlike stay. In this place, [Sat. VI, 379] the Poet expresses by it the instrument of servility applied to those that were employ'd to sing upon the stage; the *Prætor*, who set forth Playes for the delight of the People, buying youths for that purpose. And that such might not by lust spoil their voice, their overseers clos'd their shame with a case of metal, having a sharp pike of the same matter passing by the side of it, and sometimes us'd one of another form; or by a nearer crueltie, they thrust a brazen or silver wire through that part which the Jews did lose in circumcision."

Many other medical writers such as R. à Castro, Mercurialis and Casserius discuss the same matter, extracts and references to which are given by Dingwall (*Op. cit.*, pp. 34 *seq.*). Here we will merely refer to Rhodius, who, in his book already quoted, discusses in detail infibulation and its effects. He says that it is clear from Celsus that it was used for the health and the voice, and that no writer among the older authors seems to be more decisive. Continuing he declares that athletes also were sometimes infibulated, as chastity for them was an essential part of their training.

The same statement is made by T. Zwinger (*Theatrum hum. vitæ*, Basileae, 1604, ix, 2266) who states that athletes occasionally wore a fibula as well as singers and in this connection cites the case of Amœbus,

who, according to Clement of Alexandria (*Strom.*, iii, 1 and 6) was a cithara player, who, even when married abstained from consummating the union.

In dealing with the material of which the rings were made Rhodius mentions a discovery that was once said to have been made on a Roman rubbish heap where a small ring was discovered, made of bronze, and having a small gap in it. This ring, Rhodius thinks, may have been used for infibulation; and it is said that a somewhat similar ring used to be shown by Fabricius before his class which fibula was obtained from the Pinelli collection (see H. Fabricius, *De chir. oper.*, Patavii, 1647, pt. 2, p. 82). Another supposed example was that mentioned by J. Smetius (*Antiq. Neomagenscs*, Novimagi Bat., 1678, p. 82); and a form of fibula of this type is said to have been in the Museo Kircheriano in Rome (see P. Buonanni, *Musæum Kircherianum*, Romæ, 1709, p. 168). This is not a ring but a small crescentic piece of metal through the horns of which a rod passes fitted with small knobs at either end.

It would not appear that infibulation for the purpose of preserving the voice was practised extensively in later times. The operation was used merely for ensuring chastity, and in males was proposed for curing obstinate cases of onanism. M. Schurig (*Spermatologia*, pp. 548 seq.) discusses infibulation and states that, on account of vows of chastity, the custom was found both among Arabs and Egyptians and we know that ascetics of various types are sometimes accustomed to wear these appliances. Thus Menavino states that certain Moslem devotees wore rings of iron or silver (*I costumi et la vita de Turchi*, Fiorenza, 1551, lib. 2, cap. 11, p. 56), and similarly W. Schouten declares that Persian ascetics wore metal rings in their members (*Oost Indische Voyagie*, 1676, p. 235). Indian ascetics, as for example the Digambaras (Jains) sometimes go naked with the exception of rings passed through their foreskins (see the wall painting figured in A. von Le Coq's *Die buddhistische Spätantike*, Berlin, 1922, etc., Th. 3, pp. 30-31, Taf. IV and cf. J. Heller in *Archiv. f. Frauenkunde u. Konstit.*, 1927, XIII, 279; H. von Glasenapp, *Heilige Stätten Indiens*, München, 1928, Taf. 59), which shows one of the Karālingis who wear rings through the prepuce or enclose the genitals in a locked box; and A. Grünwedel (*Altbuddhistische Kultstätten in Chinesisch-Turkistan*, Berlin, 1912), who mentions the infibulatory ring or *Lingavalaya* which is still found in India.

In Europe the account of the operation left by Pierre Dionis (*Cours d'op. de chir.*, 2. éd. Paris, 1714, p. 214) illustrates how the original meaning of the custom was no longer considered.

Dionis describes how the operation should be performed and then, speaking of its practical value, states that this buckling up of young men so preserves their generative power that they may become healthy and prolific parents of a race of children destined to be of service to the Republic.

It was not to be till over one hundred years later that another author was to put forward the plea that infibulation might still be put to practical use. We shall see what he has to say later. Meanwhile it may be convenient if we discuss the question of male infibulation as a means of checking masturbation. There is no doubt that the practice, often self-inflicted, of tying up or constricting the penis, as a means of checking seminal emissions and preventing masturbation, has been known for many centuries; and there is a considerable medical literature on the subject and on the harmful consequences that ensue.

One of the earliest modern writers who advised the operation of infibulation for the purpose of checking onanism in males was S. G. Vogel (*Unterricht für Eltern*, Stendal, 1786), who advised it strongly, saying that it could be done in a few moments and met with excellent results. Indeed he is quite enthusiastic about the marvellous remedy. After mentioning other means of stopping the abuse he writes: "All these means are sometimes not sufficient to damp the devilish fire of passion, which, when it bursts forth in full fury so inflames the natural instinct as to lead direct to masturbation. All warnings, all vivid stories of death, the devil and eternal damnation are lost upon the soul of such a slave of lust, just as a drop of water upon a glowing coal. How shall we meet this unspeakable misery! There is one way which I indeed do not know from personal experience, but which witnesses declare to meet with the desired results, and which I advise urgently in doubtful cases. That method is infibulation." This grand specific has not, according to Vogel, the slightest danger; it causes but little pain, is soon done, and, compared with other means, is an infallible method of curing masturbation.

The same view was expressed three years later by J. C. Jaeger (*Grundriss der Wund-Arztneykunst*, Frankfurt am M., 1789) and it may well be that J. C. Campe was thinking of these two authors when he reports curing a case of a young man addicted to onanism who wore a ring for fifteen years (cf. *Eros, oder Wörterbuch über die Physiologie*, Stuttgart, 1849, I, p. 623 and see Campe on infibulation in his *Allgemeine Revision des ges. Schul-u. Erziehungs-Wesens*, Braunschweig, 1785-92, xvi, 218). He does not agree with them, however, in regarding the operation as harmless,

stating that it is painful and not without injury² and goes on to say that where a good education and sound morality does not protect from vice, then even infibulation will not effect a radical cure.

Modern authors rarely touch upon the question since infibulation is not often employed. L. Bauer had a case of a half-witted man whom he cured by infibulation with two rings which were merely twisted and not soldered, the patient making no attempt to remove them (see St. Louis Clin. Record, 1878, iv, 271 seq.) and the same author dealt further with the question in the same journal for 1879-80, vi, 163-65.

Apart from its uses as a remedy against masturbation, infibulation, has, as already can be seen from the foregoing remarks, rarely been advised for any other practical purpose. In 1827, however, appeared a book in Halle by Karl August Weinhold, in which was printed a plea for infibulation on a wide scale and for social purposes. The book (*Von der Uebervölkerung in Mittel-Europa und deren Folgen auf die Staaten und ihre Civilisation*) deals with overpopulation in Central Europe and the consequent poverty and misery of the people. Weinhold believed that the proposal that he advocated would solve the population question and the problem of the propagation of the unfit and the feeble minded with the consequent increase in the criminal classes. All this could be prevented by the novel expedient proposed by the Professor of Surgery at the University of Halle. His specific was simply the wholesale infibulation of a considerable portion of the male population.

According to this plan the age limits were to vary from fourteen to thirty and the persons to be treated included such diverse elements as beggars, unemployables and all the soldiers in the lower ranks of the army. The operation, according to Weinhold, is as easy and practicable as vaccination. The prepuce is drawn forward and two holes are drilled with a metal instrument. Through the orifices four or five inches of wire are passed and the ends are then brought together and carefully soldered, the join being stamped with a metal seal, so as to make it impossible to tamper with the ring without being detected by the medico-legal authorities. Should such meddling be discovered Weinhold is of the opinion that drastic punishments should be inflicted. From the ages of fourteen to seventeen the birch should be applied: from eighteen to twenty-four the treadmill is proposed, which, according to the author, would soon dissipate the energy which might otherwise be expended in propagating the species: from twenty-five

to thirty the offender should be confined for a period on bread and water.

In addition to being an excellent solution to the population problem infibulation was seen by Weinhold to be useful also in cases of masturbation, although for the latter habit among boys and young men apparatus was devised which effectually prevented the practice but which avoided mutilation of the genital organs. Such sheaths, locked cases and spiked rings, some with electrical attachments, were well known all over Europe and elsewhere, and MM. Martin and Gelbke of Paris used to display them in their surgical bazaar and gained silver medals for the ingenuity of the designs.³

In modern times infibulation, as a well known surgical operation, has disappeared: where it occurs at all it is usually a case of perversion or rings are attached to the prepuce by jealous lovers. One curious case was reported by Marx in the *Gazette de Santé* in the early nineteenth century and again by the same author in the work already cited. Further information on the same case will be found in Caufeynon's *L'Eunuchisme* (Paris, 1903, p. 208) and in J. N. Demarquay's *Maladies chirurgicales du pénis* (Paris, 1877, pp. 392-93).

It appears that a well known and rich French manufacturer, aged about fifty and of a strong constitution, consulted a certain Dr. Petroz. His trouble was an annoying discharge from the genitals and he also complained of certain ulcers which had appeared on the prepuce. On examination it was found that the foreskin had been drilled with some small holes which apparently had been made with a sharp instrument. On questioning the patient it was ascertained that some years previously he had fallen in love with a very attractive Portuguese woman. So great indeed was his passion that he remained with her in Portugal for some time and slowly began to realize that she was of an excessively jealous disposition.

One morning before getting up he suddenly felt a sharp prick on the prepuce, and on examining himself found to his amazement that he had been infibulated with a little gold clasp or fibula, which had been passed through the foreskin, closed by means

² Cf Marx, *Infibulation suivie de la dégénération squirreuse du prépuce* (Repert. gén. d'anat. & physiol. path., 1827, iv. 114.)

³ A list of the apparatus is preserved in the Bibliothèque Nationale in Paris.

of a spring and secured by a little lock the key to which the woman held. On account of his affection for her he yielded to her entreaties to wear the clasp for her sake and it was she who undid it and released it at her pleasure.

Even this however did not satisfy her. One morning he found that she had fitted a second and he again consented to wear this one as well as the first. This continued for some four or five years until the constant removal and attachment so irritated and inflamed the prepuce that the sufferer was compelled to seek medical advice.⁴

In the brief account above we have seen how infibulation was used in ancient Roman times for the purpose of enforcing chastity among certain classes and for specific purposes. Ancient statuettes illustrating the practice have been recovered and of these that of the infibulated musician is the best known. It is (or was) in the Museo Kircheriano in Rome and is about 10 cm. in height. The figure is naked, thin and emaciated in appearance and is apparently playing upon a stringed instrument. The head is bald on the crown and the body is half seated on a kind of pedestal which is not shown in our reproduction which is taken from J. J. Winckelmann's *Mon. ant. ined.* (2a. ed. Roma, 1821, II, tav. 188). The penis is very large and the prepuce is drawn forward whilst through it is passed a ring.

There is no good evidence that the figure shows a eunuch as is suggested by Jeanselme

⁴ A somewhat similar story, although not an actual case of infibulation, is that recorded by E. D. Fenner in the *New Orleans Medical & Surgical Journal* (1899-1900, lii, 152). Here a "gage d'amour" was applied to a man by his lover. It consisted of a brass ferule three quarters of an inch wide, one eighth of an inch thick and three quarters of an inch inside diameter. This cap had been slipped on to the penis whilst he slept and the result was a severe paraphimosis. It took two hours to remove the object which had to be split open with files and heavy gas fitters' pliers. Another case of self-inflicted infibulation was reported by Levy-Lenz (*Med. Klin.*, 1929, ii 1619-1620). In this instance eighteen small silver rings were found on the penis.

(*Bull. Soc. franc. d'histoire de la méd.*, 1921, XV, 98) and others. Another small figure, showing an infibulated negro seems first to have been described by Conze (*Zeitschr. f. d. öster. Gym.*, Jahrg. xxiii, Wien, 1872, 837-861). A later account was published by R. Schneider (*Jahrb. der kunst-hist. Samml. d. allerrh. Kaiserh.*, 1885, III 7) and he states that the figure is in bronze and is 9 cm. high. The fists are clenched and the head is covered with thick hair. The right arm is hanging down, slightly behind the body, whilst the left is drawn up near the shoulder. Through the prepuce, which is drawn over the glans, is a small ring, and, as in the figure of the musician, the size of the penis is exaggerated. A reproduction of the figure is to be found in L. Stieda's *Die Infibulation bei Griechen und Römern* (Sond.-Abd. aus d. anat. Heften, Merkel u. Bonnet, Heft 62 Bd. XIX, Heft 2, Wiesbaden, 1902, fig. 10, p. 248) and another illustration taken from Stieda was published by A. Sticker (*Die Umschau* 1904, viii, 352-354) where infibulation is discussed.

Apart from the examples from Roman times, we have noted above certain representations from India among the ascetics; and in Nicolay's *Les quatre premiers livres des navigations et peregrinations orientales* (Lyon, 1568) is an example of a Turkish Calender wearing a ring on the prepuce which may be compared with the stone figure on the Kaiserhaus in Hildesheim, which dates from about 1580 according to the *Bilder-Lexicon der Erotik* (Wien, Leipzig, 1931: Erg.-Bd., 318) where a photograph of the figure is reproduced.

The standard work on male infibulation is E. J. Dingwall's *Male Infibulation* (London, 1925) which includes a discussion not only of the Roman form but of certain Greek customs and other matters which have been erroneously termed infibulation. The whole question received but little attention until 1870 when L. Stephani published some observations in the *C. R. de la Commission imp. arch. pour l'année 1869*: St. Pétersbourg, 1870, pp. 146 seq. In the *Mitt. d. anthrop. Gesell. in Wien* (1894, xxiv, 131-143) O. Hovorka published some observations; and L. Stieda in the work cited above and in the *Verh. d. Gesell. deut. Naturf. u. Aerztz.* (1901, Th. 2, Heft 1, 286, ii, 93) gave a fairly full account of the practices of infibulation and the *ligatura praeputii* as found among the Greeks. Later in 1911 L. Laloy published a short account, largely drawn from Stieda, both of infibulation and ligature of the prepuce in *Biologica* (Paris, 1911, I, 233-236). Some of the other more important references are indicated in the text.

Infibulation in the Female

We must now turn our attention to the question of infibulation in females. As in the case of male infibulation the

word is often wrongly applied to other customs such as excision, a practice which, however, is sometimes followed by infibulation, which in certain cases at least may be considered in one sense accidental. Here we shall confine our attention to the operation of infibulation performed for a definite purpose; and, as in the case of the male, we shall deal mainly with those instances where a ring or some other device is employed in order to fasten together parts of the vulva for the purpose of hindering and preventing copulation. In order to give information on an operation which leads to similar results we shall also have occasion to consider a practice in which no actual instrument or clasp is attached to the vulva but where closure is effected by another method.

The simplest form of infibulation of women consists in boring a couple of holes either in the labia majora or the labia minora or both and then inserting a metal ring at a point above the vaginal orifice. It is probable that this method was used in the East, and in an Indo-Persian miniature showing the return of a warrior one of the women is represented as wearing such a ring (see reproduction in Ploss-Bartels-Dingwall, *Woman*, London, 1935, I, p. 354, fig. 313.) Similarly E. A. Gait (*Census of India*, 1911) reports that certain women in Sind are accustomed to wear such rings; and a number of modern cases are known where jealous husbands have affixed rings or clasps to the vulva of wife or lover. Thus L. Sir in *Casopis lékařův českých* (15. dubna, 1871, X, 114) narrates how a jealous man fitted a lock to his wife after boring holes in the labia for it to pass through. A similar case was reported by H. L. Collyer (*Amer. Med.-Surg. Bulletin*, Dec. 15, 1894, vii, 1523), and more information of the same kind was published by Dingwall in *The Girdle of Chastity*, 1931.

Another method of closing the vulva is by simply sewing up the labia without any preparation. At Leicester (England) assizes in 1737 a man was brought up for trial for causing bodily harm to his wife. The accused, it appeared, had determined to make sure of the fidelity of his wife by sewing up her vulva. She however "told the case to her mother, and some neighbours, who releas'd her from her pain." The prisoner was brought up for trial and

it was stated that "the said George Baggerley a certain Needle and Thread into and through the Skin and Flesh of the Private Parts of the said Dorothy in divers Places then and there wickedly, barbarously and inhumanly did force, and the said Private Parts of her the said Dorothy Baggerley, with the Needle and Thread aforesaid, did then and there sew up." The prisoner was fined twenty shillings and sent to prison for two years. As he left the court women fell upon him and scratched him, for his crime was not only, as it was said "to the great damage of the said Dorothy," but reflected on the moral uprightness of women in general (see *The Gentleman's Mag. & Hist. Chron.*, 1737, VII, 250).

A somewhat similar case was reported in 1917 by N. K. Kallianwalla (*Indian Med. Gazette*, lii, 284). Here silk ligatures were used to fasten together the labia majora, enough space being doubtless left for the purposes of urination and menstruation.

Among less civilized peoples, however, different methods prevail. The custom has not a wide distribution, the greater number of cases being reported from North-Eastern and Central Africa. The methods vary somewhat even from the same areas but the results are substantially the same. The main difference between these operations and the simple sewing up of the labia is that in the former case parts of the vulva are often excised in the first place leaving the raw surfaces to become united either with or without the help of sutures.

A recent account by Professor and Mrs. C. G. Seligman of the practice among the Kâbabîsh, a Sudan Arab tribe, will give a clear idea of the operation. Among these people the custom is exercised on girls between the third and sixth year. For the purpose of the operation the girl is placed flat on her back: her legs are then strongly flexed on her abdomen and

the thighs separated as widely as possible. The old woman, who acts as surgeon first of all draws out the clitoris, cuts it off as near the skin as possible and then proceeds to slice away the whole of the external parts of the vulva leaving only a small portion intact just above the perineum. The wound is then plastered over with flour and the legs tightly secured and in close proximity. Sometimes a small plug is inserted to keep the urethra open and the legs are kept tied up for some two or three weeks. When healing has taken place there is little left of the vulva. A small opening is all that remains, and the process of defibulation has to be resorted to before marriage.

It will be seen above that prior to infibulation, or rather closure of the vulva, excision is performed. In certain cases of excision, which have been reported from various tribes, it would seem that the consequent closure of part of the vulva was not intended but was the natural result of the tissue uniting when the legs are kept tightly joined. We have therefore in these cases an accidental closure of the vulva, and thus the term infibulation should be restricted to those cases where the excision is merely a preliminary operation designed to effect subsequent closure, or where actual sutures are employed to sew up the labia accompanied or not by previous excision.

General accounts of female infibulation are published in Ploss-Bartels-Dingwall, *Woman* (Vol. I, pp. 353 seq.) where references to other works are to be found; in O. Stoll's *Das Geschlechtsleben in der Völkerpsychologie* (Liepzig, 1908, pp. 549 seq.); in F. Bryk's *Die Beschneidung bei Mann und Weib* (Neubrandenburg, 1931 pp. 244 seq.); and good detailed accounts of the operation among various tribes are those by the Seligmans, quoted above in *Harvard African Studies* (1918, II, 150-151); by F. Jousseume in his *Impressions de voyage en Apharras* (Paris, 1914) and in the *Revue d'Anthrop.*, Paris, 1889, IV, 675-686; and by C. K. Rein in *Abessinien* (Berlin, 1918-20, Vol. 3, p. 293). Several of the modern references are indicated in the text and further informa-

tion can be obtained by consulting the writers quoted by the above mentioned authorities.

E. J. D.

INGENUA. (Masculine form: *Ingenuus*. Adjective applied to a free-born woman in ancient Rome. It was the moral protection of the *Ingenua* that the Romans had in mind in their legislation concerning prostitution and prostitutes.

INGÉNUÉ. A French word, adopted into English through the theatrical profession, where it has reference to the rôle of an artless young girl; from the Latin *ingenua*.

INGENUUS. In ancient Rome, an adjective applied to *one born of a certain father*, i.e., as Livy puts it, one who could prove his free birth by naming his father; it was these who became the *patricians* of the Roman state, and who were known as *ingenui* (Livy, x, 8, 10). The evolution in meaning of the adjective is of interest: literally, *native, indigenous, inborn, innate*; then, *free-born; worthy of a freeman, or noble; frank, candid, ingenuous*; and finally, *weak, delicate, tender*, which brings us down to the signification of the modern *ingénue*.

INSPECTIONIST, a male who craves to examine every portion of a woman's body, and to see her perform intimate acts, such as dancing in the nude, micturition and defecation. Inspectionism is normal if followed by the desire for copulation, and becomes abnormal only when it is a substitute for that desire.

INTERNATS. Forel's term for institutions such as schools, convents, dormitories, asylums, and prisons, where individuals of the same sex live in the same building for a considerable time.

August Forel (*The Sexual Question*, 1905): "All internats exert a peculiar influence on sexual life. Inverts are strongly attracted toward internats, where they can readily indulge their passions."

ISO-AGGLUTINATION AND PARENTAGE. Primitive man, according to some writers, lived in a condition of promiscuity. With the dawn of civili-

zation the family was made the basis for human relationships, and monogamy must be considered the highest type of family that the human race has yet attained. Our present society would be impossible without the family, which, in turn depends upon our laws of matrimony. Any children born out of lawful wedlock are said to be illegitimate, and the status of such children is one of our most difficult social problems. The importance of this problem is evident when it is considered that the percentage of illegitimate births varies from 3 to 15 per cent of the total births in different countries.¹

According to an old law phrase, the illegitimate child is *filius nullius*, the child of no one, and his father was under no obligation to support him. Under common law doctrine, the maintenance of the child devolved upon the mother. In England and in the United States, statutes have been enacted under which the court may compel the father to support the child. More than 1,000 of these bastardy proceedings are tried in the courts of New York City alone every year (see table 1). In many of these cases the accused man denied ever having had any relations with the woman, or if he admitted having had sexual relations, claimed that there were other men any one of whom might be the father of the child. However, the vast majority of disputed paternity cases (as well as uncontested cases) result in convictions, probably out of sympathy for the mother and perhaps because of a subconscious desire on the part of the court to prevent the burden of supporting the child from falling upon the state.

Since there was no reliable scientific method of determining whether or not a given man was the father of a given child, and it was frequently merely a case of the mother's word against that

TABLE 1
PATERNITY CASES IN
NEW YORK CITY¹

Year	Total cases handled	Total settled suits	Total judgments ²	Ad-nied ³	De-nied ³	Mar-ried	Disc. Cases ⁴	Pend-ing ⁵
1930	842	349	564	366	61	16	112	31
1931	1016	576	534	333	69	28	92	43
1932	1226	635	707	430	90	34	121	75

of the accused man, this was unavoidable in the past. During the past few decades, however, a method has been developed which makes it possible to render a definite decision in a certain percentage of cases. This method involves the use of certain "blood grouping tests," which are an outgrowth of a relatively new branch of medicine, namely serology.

The tests have been applied in European countries since 1924 and it has been calculated that in 40 per cent of the cases in which blood tests are done the accusations made are false. Since women are the same the world over, it is likely that the same proportion of false accusations obtain here, so that many of the convictions rendered in the past were probably unjust. The routine use of blood grouping in all cases of disputed paternity will help to remedy this situation.

Another type of case which arises not infrequently, where blood grouping tests are indicated, is that in which the child is born in lawful wedlock but the husband denies paternity.

¹ Figures in the first two columns were received from the Department of Welfare where these cases originate. Figures in the other columns are taken from the Corporation Counsel's office. The figures in the columns "Total settled" and "Total suits" cannot be added to make up column for "Total handled" because they came from different departments and many cases overlap. Approximately 15 per cent of the cases complained of are dropped with no action taken at all.

² In these cases, the defendant was adjudged the father of the child by the court.

³ In these cases the defendant was acquitted.

⁴ This includes cases which were amicably settled, or where the child has been adopted or died, or moved out of the jurisdiction.

⁵ Pending cases are those which are being followed up; cases are followed until the child is 16 years of age, except where the child is rich, then 18 years is the limit.

¹ In New York City the percentage of illegitimate births is exceptionally low. Thus, in 1933, out of 103,500 births, 1,648 (1.6 per cent) were illegitimate.

According to the laws of this country, any child born in lawful wedlock is considered to be legitimate. From the earliest days of the law, this presumption, which is expressed by the old Roman law "*pater est quem nuptiae demonstrant*," has been extremely difficult to overcome.

At one time the law's attempt to protect the child's good name went to absurd degrees, as may be gleaned from the rule of the "Four Seas" in England.² On the basis of this rule, one court decreed that a child born in England was legitimate even though the husband resided in Ireland during the whole term of his wife's pregnancy and for a long time previous thereto, because Ireland was within the king's domain. This grotesque rule was modified in 1807 by Lord Ellenborough, and to-day the presumption of legitimacy, though difficult to overcome, may be rebutted by other proof in this country.

Recently a bill was introduced into the Philippine legislature, abolishing the conclusive presumption of paternity established by Section 333 of the Code of Civil Procedure and Article 108 of the Civil Code, regarding the legitimacy of a child, and further providing for a disputable presumption of legitimacy of a child born under certain conditions. Arguments were advanced by Dean Jorge Bocobo against this bill, one being that such conclusive presumption is necessary for the existence and stability of the family.

This argument was ably answered by Alfred W. Herzog⁴⁰ who stated, "Where an unchaste female, being pregnant, can trick an

² This rule was: "If the husband be within the four seas, that is, within the jurisdiction of the King of England, if the wife has issue, no proof is to be admitted to prove the child is a bastard, unless the husband has an apparent impossibility of procreation, as if the husband be but eight years old, or under the age of procreation, such issue is a bastard. But if the issue be born within a month and a day after marriage between the parties of full lawful age, such a child is legitimate (Coke on Littleton, 244a).

unsuspecting male into marriage, knowing that the child born to her will be legally acknowledged and declared as the child of her husband, although he is not the child's real father; likewise, where an adulterous wife knows that no matter who the child's real father is, her husband will by law be held to be its legal father, such a state of affairs does not tend toward the stability of the family but to its demoralization."

A third type of case in which blood grouping has proved to be of value is in hospital cases where two infants, born at approximately the same time, are accidentally interchanged. Herzog cites still other cases in which blood grouping can be applied forensically. For example, it is suspected that a wet-nurse has wilfully substituted her own infant for the one placed in her custody, so that her own child may have the benefits of a better home. Or, a woman has simulated pregnancy and child birth, and now pretends that a certain child is her own, in order to compel a man to marry her, or to obtain dower in her dead husband's estate (in jurisdictions where birth of issue is a prerequisite to the right of dower) or in order that the child may become the heir to her husband's estate.

The Blood Grouping Tests.—The discovery and early history of the blood groups are closely related to the development of blood transfusion. In the first transfusions made on human beings for therapeutic purposes, the blood of lower animals, especially the lamb, was used. Whereas in some cases apparent improvement resulted, in many cases there were alarming or fatal reactions. These reactions remained unexplained until Ponfick, Landois and others showed that upon addition to human blood of animal blood *in vitro* the red blood cells would agglutinate or swell and rupture (a phenomenon now known as *hemolysis*). Subsequently it was shown that under proper experimental conditions, animal sera agglutinate human red blood cells, and that human serum

agglutinates the blood cells of lower animals.

As a result of these experiments, transfusions on humans were thenceforth made only with the blood of human beings, but alarming and fatal reactions continued to occur. This was puzzling since it was assumed that the blood of all individuals of a species were identical. The problem was finally solved by Landsteiner¹¹ in 1900, who showed that the sera of certain normal individuals agglutinate the red blood cells of certain other normal individuals. On the basis of this reaction of iso-agglutination,³ all human beings have been divided into four groups, and transfusions can be safely given if donor and recipient both belong to the same blood group. Since more than 10,000 transfusions are performed every year in New York City alone, Landsteiner's discovery of the blood groups has been responsible for the saving of thousands of lives.

The iso-agglutination reactions, which determine the four human blood groups, have been explained by Landsteiner¹² by postulating the existence of two agglutinogens A and B in the red blood cells, and two corresponding agglutinins, α (or anti-A) and β (or anti-B) in the serum. Under the nomenclature most universally used at present, the blood groups are named after the agglutinin content of the red blood cell. Thus, if agglutinin A is present, but B is absent, the individual is said to belong to group A; if only agglutinin B is present, the group is B; if both agglutinogens are present, the group is AB. Blood lacking both agglutinogens is said to belong to group O.

³ *Iso-agglutination* refers to agglutination resulting when cells and serum of animals of the same species are mixed; *heteroagglutination* refers to agglutination resulting with serum from a different species. With the exception of the anthropoid apes, iso-agglutination is either absent or weak in most animals; in some species where stronger reactions are obtained, they are irregular and do not determine sharply defined groups like in man.

If serum containing agglutinin α is mixed with red blood cells containing agglutinin A (group A or AB), these cells will be clumped together (or agglutinate) or, under certain conditions, they may be hemolyzed. On the other hand such a serum will not affect red blood cells not containing A (of group O or group B). Similarly, agglutinin β acts only on group B and AB, but not on blood of group O or group A. Naturally, an individual of group A cannot have agglutinin α in his serum, and neither can a group B individual possess agglutinin β . According to Landsteiner's rule, there is a reciprocal relationship between the agglutinin content of the serum and the agglutinin content of the red blood cells, so that those agglutinins are present for which there are no corresponding agglutinogens in the blood cells. The composition of the four blood groups may therefore be summarized as shown in table 2.

TABLE 2

Group	Approximate Frequency in New York City (Per Cent)	Red Blood Cells (Agglutini-)	
O	37		α and β
A	40	A	
B	17	B	
AB	6	A and B	

The actual technique of the tests is simple. All that is required is a suspension of the red blood cells of the individual to be tested, which is prepared by mixing a few drops of the blood from the finger with enough isotonic salt solution to make a one to two per cent suspension. Two sorts of testing sera are used: one containing agglutinin β alone (group A), the other, agglutinin α alone (group B). These sera are obtained from normal individuals by collecting blood which is allowed to clot. After the clot contracts, the clear yellow serum can be separated off.

The actual tests as recommended by Landsteiner³ are performed by mixing

one drop each of serum, saline and cell suspension in small test tubes (inside diameter 8 mm.) The reactions are usually visible in a few minutes, but final readings should not be taken for an hour. The tests may also be performed on glass slides (see figure 2). If the cells are agglutinated by both sera, the individual being tested belongs to group AB; if by neither, to group O; if only by group B serum, to group A; and if only by group A serum, to group B. The difference between a positive and a negative reaction is shown in figures 1 and 2.

the tests, since the group can be determined by testing the red cells alone. If any doubt exists, however, the tests should be repeated at a later date, after the agglutinins have made their appearance.

Blood Grouping and Parentage.—

The application of blood grouping in cases of disputed parentage is made possible by the fact that the blood groups are inherited in accordance with a simple and exact mechanism. That the blood groups are inherited has been known since 1910, when, after a preliminary study of Ottenberg and

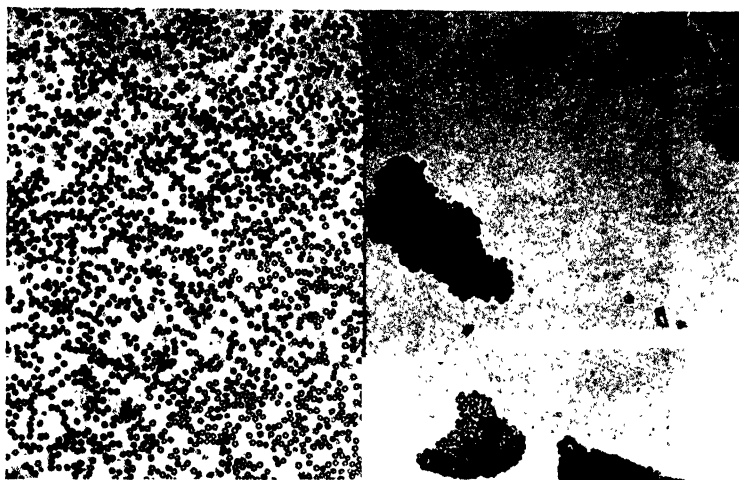


FIG. 1. MICROSCOPIC APPEARANCE OF THE AGGLUTINATION TESTS

Left: Negative reaction—each red blood cell is separate and distinct. *Right:* Positive reaction—the red blood cells are agglutinated together in large clumps.

The reciprocal relationship between the agglutinin content of the serum and the agglutinin content of the red blood cells furnishes a useful check on the technique. Thus, the agglutinin content of the serum is readily determined by testing the serum against known blood suspensions of group A and group B. This check should never be omitted when making tests for forensic purposes. In newborn infants, it will frequently be found that the agglutinins are absent, since the agglutinins are not fully developed at birth. This should not interfere with

Epstein,¹³ von Dungern and Hirsfeld¹⁴ found in an investigation on 72 families with 102 children that the agglutinogens A and B never appear in the blood of a child unless present in the blood of one or both parents. The accuracy of this rule has been established by studies made by numerous independent investigators on thousands of families. In 1925, Bernstein¹⁵ showed that the four blood groups are inherited by means of three allelomorphous genes, A, B and O. Since every individual possesses two of these genes, one of which is derived from

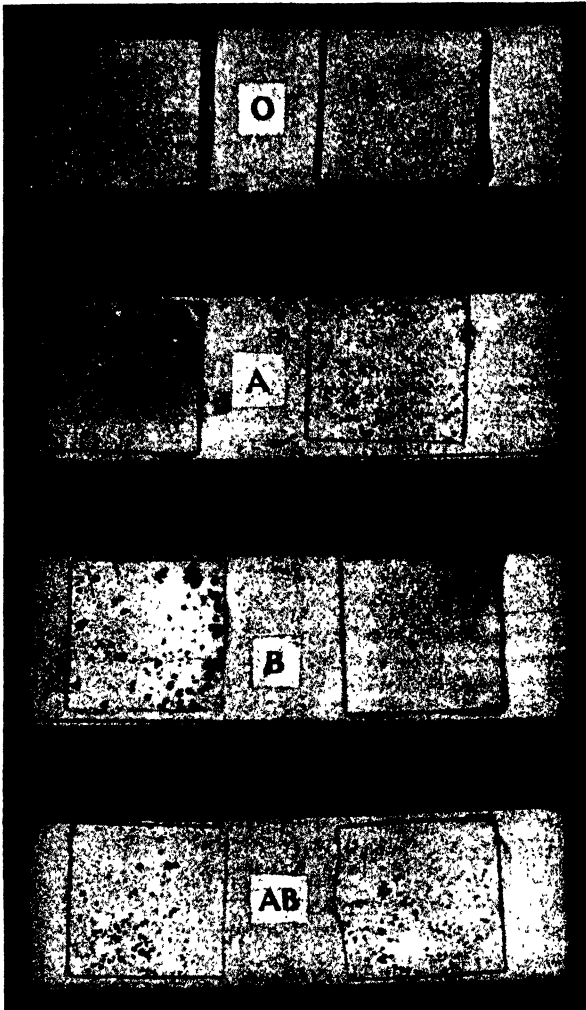


FIG. 2. BLOOD GROUPING ON GLASS SLIDES

Actual size. The tests were performed by mixing one drop of the unknown cell suspension with one drop of group A serum (left), and one drop of cell suspension with one drop of group B serum (right). A positive reaction is recognized by the appearance of brick-red granules, due to the clumping together of the red blood cells, whereas in the negative reaction the suspension is unaffected and appears homogeneous to the naked eye.

either parent, there exist six "genotypes" corresponding to the four blood groups as follows:

GROUP	GENOTYPE
O	OO
A	AA and AO
B	BB and BO
AB	AB

On the basis of this theory, it is simple to determine what the groups of the children must be when the groups of the parents are known. For example, if the parents belong to group AB and group O, respectively, the former parent, of genotype AB,

will produce equal numbers of germ cells bearing gene *A* and gene *B*, whereas the latter, belonging to genotype *OO*, will only produce germ cells bearing gene *O*. Half of the children will therefore belong to group *A* and half to group *B* (corresponding to genotype *AO* and *BO*, respectively). For practical purposes Bernstein's theory (see table 3) may be summarized in the following two laws:

1: The agglutinogens *A* and *B* cannot appear in the blood of a child unless present in the blood of one or both parents.

2: A group *AB* parent cannot have a group *O* child; and a group *O* parent cannot have a group *AB* child.

HEREDITY OF THE LANDSTEINER BLOOD GROUPS

GROUPS OF PARENTS	GROUPS OF CHILDREN POSSIBLE	GROUPS OF CHILDREN NOT POSSIBLE
O × O	O	A, B, AB
A × A	A	A, AB
A × A	O, A	B, AB
A × B	O, A, B, AB	
B × B	O, B	A, AB
O × AB	A, B	O, AB
A × AB	A, B, AB	O
B × AB	A, B, AB	O
AB × AB	A, B, AB	O

How this knowledge can be applied is best illustrated by citing an actual case. In a case tried in the court of Common Pleas of New Haven in 1931, a woman accused a man of the paternity of her illegitimate child. Although the defendant repeatedly denied his guilt, the weight of public opinion was against him. The bloods were sent to the present writer⁴⁴ for examination, and it was found that the man belonged to group *A*, the woman to group *O*, and the child to group *B*. Since the child possessed the agglutininogen *B*, and this agglutininogen was absent from its mother's blood, the true father could only belong either to group *B* or group *AB*. Confronted with this evidence, the woman with-

drew her charge and the man was acquitted. In this case, therefore, the blood tests prevented a miscarriage of justice.

Suppose, however, that it had been found that the accused man belonged to group *B* or group *AB*. This would not prove that he was the father of the child any more than any other man belonging to either of these groups. In such an event, the blood tests would be of no avail. In general, therefore, blood grouping can be used to *exclude*, not to *prove*, paternity.

In 1930, there was an interesting case in Chicago, which illustrates another application of the Landsteiner blood tests. In this case, the problem of identifying two new-born infants which had been interchanged in a hospital was solved by blood grouping. One week after taking their baby home, Mr. and Mrs. B. discovered that the baby had a label on its back with the name "W." At the W. home the baby was found to bear the label "B." All six individuals were then grouped with the following result:

Mr. B.....group AB	Mr. W....
Mrs. B.....group O	Mrs. W....
Baby bearing label "W" group O	Baby bearing label "B" group A

Since a group *A* child cannot occur in the W family, but may occur in the B family, and since a group *O* child cannot occur in the B family but it is possible for the W family, it was evident that the babies had been properly labelled but had been taken to the wrong homes.

Only with certain combinations of the blood groups of mother and child (see table 3) is a decision possible. Thus, in one sixth of the cases where false accusations are made, blood grouping can establish the man's innocence.³² Until recently, nothing could be done about the remainder of the cases. In 1927, however, Landsteiner and Levine¹⁹ discovered two additional agglutinogens, *M* and *N*, in human red blood cells. These ag-

glutinogens had not been previously observed because normal human or animal sera do not contain agglutinins against M and N. However, by injecting human blood into rabbits or other animals, such as cats and goats, sera may be obtained with agglutinins for M and N. The agglutinogens M and N are entirely independent of the agglutinogens A and B and define three distinct types of human bloods as follows:

Type M (blood containing only agglutinogen M), which makes up approximately 30 per cent of the general population.

Type N (blood containing only agglutinogen N): 20 per cent.

Type MN (blood containing both agglutinogens, M and N): 50 per cent. No individuals have been found whose blood lacks both agglutinogens M and N in more than 50,000 tests made to date.

According to Landsteiner and Levine, the heredity of the three MN-types is determined by a single pair of allelomorphic genes, *M* and *N*. Three genotypes are possible, corresponding to the three types as follows:

TYPES	GENOTYPES
M	<i>MM</i>
N	<i>NN</i>
MN	<i>MN</i>

This theory, which has been confirmed by studies of many independent investigators on several thousand families, therefore explains the non-existence of blood lacking both agglutinogens. It is a simple matter to determine what the types of the children must be if the types of the parents are known. For example, if the parents belong to type M and type MN, respectively, their respective genotypes are *MM* and *MN*. The former parent produces germ cells only bearing gene *M*, the latter produces equal numbers of germ cells bearing gene *M* and gene *N*. Half of the children must therefore belong to type M, and half to type MN.

The mechanism of heredity of the agglutinogen M and N is given in table 4. This table may be summarized for medicolegal purposes in the following two laws:

1. The agglutinogens M and N cannot appear in the blood of a child unless present in the blood of one or both parents.

2. A type M parent cannot give rise to a type N child, and a type N parent cannot have a type M child.

One case will be cited which illustrates the practical value of the MN-types in cases of disputed paternity:

In a certain case⁴⁴ the question arose whether the husband or another man was the father of a certain child. The husband was willing to support the child regardless of its paternity, but the wife insisted she would live only with the child's true father. Since both men belonged to group A, no decision could be made on the basis of the classic blood groups. When the bloods were tested for the properties M and N, however, the lover could be definitely excluded, since he belonged to type N and the child belonged to type M. Of the two men, therefore, only the husband could be the father of the child. The complete results of the blood examinations were:

BLOOD	GROUP	TYPE
Husband	A	M
Lover	A	N
Wife	B	M
Child	A	M

Table 4
HEREDITY OF THE AGGLUTINOGENS

TYPES OF PARENTS	PER CENT CHILDREN OF TYPES		
	M	N	MN
M × N	100	0	0
N × N	0	100	0
M × M	0	0	100
M × MN	50	0	50
N × MN	0	50	50
MN × MN			50

As frequently occurs when attempts are made to make useful application of

scientific knowledge, the blood tests in this case failed to produce the anticipated beneficial result, since the woman finally elected to go off with the lover.

Paternity and the Law.—The Landsteiner blood tests have been applied in cases of disputed paternity since 1924 in Europe. Some of the countries in which the tests are being applied are Austria, Germany, Italy, Sweden, Denmark, Russia, etc. As early as 1929, Schiff³⁵ was able to compile statistics on over 5,000 European cases in which the tests had been used, and this figure has undoubtedly been considerably increased by the present time.

In this country, except for isolated instances in Connecticut, Ohio, Illinois and Pennsylvania, the method has not been applied. The main reason why the tests have not been more extensively used is that the courts did not have the power to compel individuals to submit to these tests against their will. Thus, in a recent case tried in the Supreme Court of New York State, on application of the defendant in the action, Justice Meier Steinbrink ordered the performance of blood grouping tests. The Appellate Division held, however, that there was no statutory authority for such an order, and Justice Steinbrink's decision was reversed. Shortly thereafter, three bills giving the courts the power to order such blood grouping tests were passed by the New York State Legislature, and these became laws³⁶ on March 22, 1935. Already, similar bills have been proposed in Texas and Wisconsin, and undoubtedly other states will follow the example set by New York State, so that the tests should become available in all cases of disputed paternity in the near future.

The great value of the blood grouping tests is emphasized when they are compared with the methods formerly used, and still being used in our courts to prove or disprove parentage. One of the most ancient methods is by

showing the existence of resemblance between the putative father and child. The unreliability of this method is demonstrated in the following comparison:

1. The blood groups (and MN-type) of an individual can be determined at birth, or the latest, during the first few months after birth, and remains unchanged regardless of disease, age, drugs, etc. On the other hand, an individual's features are not fully formed until puberty, and even after that time are continually changing, and may be completely altered by disease (such as smallpox, acne, etc.) or accident (burns, lacerations, etc.)

2. Blood grouping is purely objective. Thus, if one competent observer finds that a given individual belongs to group A type M, all other observers making independent examinations of that individual's blood will obtain the same result. On the other hand, the determining of facial resemblance is largely subjective, so that there are often differences in opinion.

3. The blood groups (and MN types) are inherited by means of a simple, exact mechanism, which is known, so that definite predictions can be made in given cases. On the other hand, the facial features are inherited by means of many factors, since the features have many components (the chin, nose, brow, etc.), each probably with an independent heredity, yet not even the heredity of any of the components is understood. Not infrequently a child does not resemble either parent; and, on the other hand, two totally unrelated individuals may closely resemble one another.

In this connection, it is of interest to cite a case³⁷ tried in the Court of Quarter Sessions of Fayette County, Pennsylvania, in 1931. In this case, a man was accused of the paternity of a certain infant, but according to the results of the blood grouping tests he could not be the father. Nevertheless, since the jury was convinced by the district attorney that the child in

question showed some resemblance to the accused man's *father*, they returned a verdict of "Guilty." Fortunately, the judge did not allow himself to be deceived, and finding the verdict to be against the evidence, he declared a mistrial. The woman never applied for a new trial since shortly afterwards the infant's features began to change, and three years after the trial it had features definitely negro in character, despite the fact that both the mother and the supposed father were white.

In certain states, e.g., New York State, the law does not permit the exhibition of the child to the jury for the purposes of proving paternity, since it is recognized what part imagination plays in such opinions. Yet in certain other states, not only is it permitted to exhibit the child, but even the use of photographs is allowed.

Evidence concerning the duration of pregnancy is admissible in cases of disputed paternity. The average duration of pregnancy is accepted as 280 days, but there have been live premature births as early as 215 days, and postmature births as late as 330 days. In some countries the legally acceptable limits of pregnancy are fixed by law. In France, for example, the legitimacy of a child born 300 days after the dissolution of a marriage may be contested. In America a more conservative attitude is adopted, since each case is judged on its own merits.

The main shortcoming of this method is that it can be practised in only rare instances, in contrast to the blood-grouping method which may be used in every case. Furthermore, in most cases where attempts are made to use this evidence, there is conflict of testimony of the mother and putative father as to the date of intercourse. Thus, in a case recently tried in a New York court, a man sought an annulment of his marriage, since his wife gave birth to a child only five months after their wedding. He denied having had intercourse with his wife before marriage, but she contended that there had been such relations. In order to protect the interests of the child, the testimony of the wife was accepted and the application for annulment denied. Possibly this case would have been solved by blood tests.

Other methods have also been used in the courts to prove or disprove parentage, the most important of which is evidence concerning the presence of sterility or impotence. This entire subject is fraught with exceptions and doubts, since it is difficult to establish with certainty the complete absence of live spermatazoa. The mere fact the intercourse is diffi-

cult or unsatisfactory does not necessarily prove the existence of sterility.

This brief review of the other methods being used in our courts to solve the problem of parentage only serves to emphasize the great value of blood grouping. The routine use of blood grouping tests in all cases of disputed parentage is therefore urged in order to promote the ends of justice.

I. BOOKS AND REVIEWS ON BLOOD GROUPING: ¹ L. Hirsfeld, *Konstitutionsserologie und Blutgruppenforschung* (1928); ² L. Hirsfeld, *Hauptprobleme der Blutgruppenforschung in den Jahren 1927-1933*, *Ergeb. der Hygiene*, etc., (1934); ³ K. Landsteiner, *The Human Blood Groups*, in Jordan and Falk's *Newer Knowledge of Bacteriology and Immunology* (1932); ⁴ L. Lattes, *The Individuality of the Blood* (1932); ⁵ P. Levine, *Menschliche Blutgruppen und individuelle Blutdifferenzen*, *Erg. inn. Med. u. Kinderheilk.* (1928); ⁶ F. Schiff, *Die Technik der Blutgruppenuntersuchung* (1932); ⁷ F. Schiff, *Die Blutgruppen und ihre Anwendungsgebiete* (1933); ⁸ L. H. Snyder, *Blood Grouping in Relation to Legal and Clinical Medicine* (1929); ⁹ P. Steffan, *Handbuch der Blutgruppenkunde* (1932); ¹⁰ A. S. Wiener, *Blood Groups and Blood Transfusion* (1935).

II. THE LANDSTEINER BLOOD GROUPS: ¹¹ K. Landsteiner, *Centralbl. f. Bakteri.* (1900); ¹² K. Landsteiner, *Wiener klin. Woch.* (1901); ¹³ A. A. Epstein and R. Ottenberg, *Proc. New York Pathol. Soc.* (1908); ¹⁴ E. v. Dungern and L. Hirsfeld, *Zeitschr. f. Immunitäts.* (1910); ¹⁵ F. Bernstein, *Klin. Woch.* (1924); *Zeitschr. f. induct. Abstamm. u. Vererbungs.* (1925); ¹⁶ F. Schiff, *Klin. Woch.* (1928); (1929); ¹⁷ O. Thomsen, *Deutsche Zeitschr. f. d. ges. gerichtl. Med.* (1927); ¹⁸ A. S. Wiener, M. Lederer, and S. H. Polayes, *Jour. Immunol.* (1930); for a complete description of the technique see Wiener (10) and Schiff (6).

III. THE AGGLUTINOGENS M AND N OF LANDSTEINER AND LEVINE: ¹⁹ K. Landsteiner and P. Levine, *Jour. Exp. Med.* (1928); ²⁰ J. Clausen, *Undersøgelser over de Serologiske Blodtypegenskaber M og N* (Copenhagen, 1934); ²¹ A. S. Wiener, R. Zinsler, and J. Selkove, *Jour. Immunol.* (1934); also see Wiener (10) and Schiff (6).

IV. HEREDITY OF THE AGGLUTINOGENS M AND N: ²² K. Landsteiner and P. Levine, *Jour. Exp. Med.* (1928); ²³ A. S. Wiener and M. Vaisberg, *Jour. Immunol.* (1930); ²⁴ A. S. Wiener, *Jour. Immunol.* (1931); ²⁵ A. S. Wiener, S. Rothberg and S. A. Fox, *Jour. Immunol.* (1932); ²⁶ F. Schiff, *Deutsche Zeitschr. f. d. ges. gerichtl. Med.* (1931); (1933); ²⁷ O. Thomsen and J. Clausen, *Hospitalstid.* (1932); ²⁸ J. Clausen, *Hospitalstid.* (1931); ²⁹ G. Blaurock, *Münch. med. Woch.* (1932); ³⁰ L. Lattes and G. Garrasi, *Atti d. Cong. Naz. di Microbiol.* (1932); ³¹ P. Moureau, *Annales*

d. Médecine Légale (1934); also see reviews by Wiener (10), Clausen (20) and Hirsfeld (2).

V. CHANCES OF PROVING NON-PATERNITY: ³²A. S. Wiener, Jour. Immunol., (1930); (1933); ³³S. B. Hooker and W. C. Boyd, Jour. Immunol. (1929); ³⁴S. Koller, Zeitschr. f. Rassensphysiol. (1931).

VI. MEDICOLEGAL APPLICATION OF BLOOD GROUPING IN EUROPEAN COUNTRIES: ³⁵F. Schiff, Die Blutgruppenvererbung in ihre gerichtlichen Anwendung, *Med. Welt.*, 3: 1213 (1929); ³⁶O. Thomsen, Ugeskr. f. Læger (1928); ³⁷K. Sand, W. Munck, and T. G. Knudtson, Deutsche Zeitschr. f. d. ges. gerichtl. Med. (1930); ³⁸G. Wagner, Münch. med. Woch. (1928); ³⁹E. Wolff, Acta Med. Scand. (1929); ⁴⁰F. Schiff, Deutsche Zeitschr. f. d. ges. gerichtl. Med. (1933); ⁴¹H. Mayser, Aertztl. Sach. Zeit. (1932); ⁴²E. Wolff and B. Jonsson, Deutsche Zeitschr. f. d. ges. gerichtl. Med. (1933); Acta Pathol. et Microbiol. Scand. (1935). Statistics on the agglutinogens M and N are given in (40), (41) and (42).

VII. MEDICOLEGAL APPLICATION OF BLOOD GROUPING IN THE U. S.: ⁴³B. Lee, Amer. Bar Assoc. Jour. (1926); ⁴⁴A. S. Wiener, Amer. Jour. Med. Sciences (1933); Canadian Med. Assoc. Jour. (1935); ⁴⁵S. B. Hooker and W. C. Boyd, Jour. Criminal Law and Criminology (1934); ⁴⁶P. Levine, Amer. Jour. Police Science (1932); ⁴⁷A. S. Wiener, St. John's Law Review (1933); ⁴⁸Evidential value of Blood Groups, New York Law Journal, (1932); Editorial, Proof of Paternity by Blood Tests and Other Methods, New York Law Journal, (1933); ⁴⁹A. W. Herzog, Medical Jurisprudence, ch. 51 (1931); Philippine Law Journal, No. 18 (1933); ⁵⁰Beuschel v. Manowitz, (N. Y.), 271 N. Y. S. 277: 272 N. Y. S. 165, Abstracted in Jour. Amer. Med. Assoc. (1935); ⁵¹H. A. Heise, Amer. Jour. Clin. Pathology (1934); ⁵²K. Landsteiner, Jour. Amer. Med. Assoc. (1934); ⁵³E. F. Koch, St. John's Law Review (1934); ⁵⁴Laws of New York 1935, Chapters 196, 197 and 198. Blood grouping tests. ⁵⁵P. Levine, Jour. Lab. and Clin. Medicine (1935).

A. S. W.

IT. Sex appeal, a mysterious power which cannot be cultivated, but which some women naturally possess, and thereby are irresistible to men. The conception was popularized by Elinor Glyn's book (*It*, 1927); in her brief prime, Clara Bow played the title rôle on the screen, and captured the imagination of America as "the It girl." The expression is used in such phrases as "to have *It*"; "she has *It*."

Rudyard Kipling (*Mrs. Bathurst*, 1904):

"Tisn't beauty, so to speak, nor good talk necessarily. It's just *It*. Some women'll stay in a man's memory if they once walked down a street.

JACK-GAGGER, slang term for a man who lives by the prostitution of his wife.

JUS PRIMAE NOCTIS [DROIT DU SEIGNEUR]. The "Right to the First Night," or "Right of the Lord," as it is known in French, is commonly understood as "a lascivious tribute levied by feudal lords upon their vassals, in accordance with which the lord enjoyed the first embrace of the vassal's bride."¹ There are a number of popular expressions, in various languages, relative to this much debated "right."

The Scotch, for instance, put it thus: that "Noblemen should vse (common) menis wyfes at their pleisour," which would appear to point to somewhat more than a mere "first night" custom. With the French, it was the *droit* "de mener la mariée à la moustier pour le seigneur en faire à sa volonté," which in turn hints at an ecclesiastic element in the proceeding (*moustier*, modern French *moutier*, monastery or convent). The cynic saw it as the right to be the father of bastards: "le droit d'avoir des enfants dont on n'est pas le père." The Low Latin term is *Calagium* (French, *cullage*), which will be found in the *Glossarium* of Ducange.² Other terms are *jambeage*, *cuisseage*, "virginal tribute," *gambada* (Italian), *derecho de pernada* (Spanish). Among yet other more dubious expressions are to be found *Jus coxae locandae*, *Jus coxae luzandae*, *Jus cunnagii*, *Jus cunni*.

Perhaps, few questions in the field of medieval scholarship have been the subject of more controversy than has this one, having to do with the exact character of the "right" claimed and enjoyed by the feudal lord. The theme is a favorite with French historians, and with French writers in general. Augustin Thierry, Dulaure, Châteaubriand, Ménéage, Montaigne, Voltaire, Montesquieu, Michelet, Littré, are but a few who have discussed it or touched upon it. It has been the subject, as will be seen a little later, of innumerable theatric pieces in French and other languages. A body of anecdotes has grown up about the

¹ Paolo Mantegazza, *Gli amori degli uomini*, 1885, English translation by Samuel Putnam, 1935, Part Second, ch. xi.

² Du Cange, *Glossarium mediae et infimae latinitatis*, ed. L. Favre, Niort, 1883.

tradition;³ and while scholars have been inclined, frequently, to deny the factual existence of a sexual tribute behind the indubitable *mercheta*, or money payment, laymen on the other hand would seem to have taken it largely for granted, as Sir Walter Scott did, and as Bernard Shaw more recently has done.⁴

As for the authorities and special students, some, such as Schmidt, have dismissed the whole thing as a "learned superstition" (*gelehrter Aberglaube*) and have disposed of the expression as a jocular one ("ein bloss scherzhafter Ausdruck"). Others have seen it as having to do merely with the right of money coinage. It is none the less significant, especially when we remember that it was in Scotland that the custom, real or legendary, is supposed to have originated, to find a reputable Scottish jurist of to-day, after a survey of the evidence, lending the weight of his opinion to the side of those who believe that the *Jus primae noctis*, in its full sexual implication, was at one time actually practiced. Such an authority is Hector M'Keechie, writing in the *Juridical Review*⁵ of Edinburgh (1930).

Of those who deny the existence of the custom in its popularly ascribed form, some would explain individual instances as mere tyrannical acts on the part of lord or sovereign ("*Schandthaten der Tyrannen*"). Some, again, would attribute such actions, or such a "right," if it existed, to the clergy; and we find a *jus cunnagii* spoken of in connection with the canons of Lyons, and an allusion to those "*abus odieux*" which "*ne constituèrent jamais un droit.*"⁶

The truth is, isolated examples of a tyrannical usurpation of the bridegroom's privileges, amounting in appearance to a *Jus primae noctis*, are to be met with in remote antiquity. Heracles Ponticus, 360 B.C. (?) is our authority for one of these cases. He

tells of a tyrant on the island of Cephalonia, in times which for the Greek writer were "ancient," who was in the habit of deflowering his maiden subjects before their marriage. One Antenor, the legend ran, in rescuing a certain girl, had slain the tyrant with a sword concealed under his clothing, and as a reward, had been made the people's ruler.⁷ There is, further, Herodotus' account of the Adyrmachidians, who were in the habit of presenting their virgin brides to the sovereign, who had the privilege of deflowering them if he chose.⁸ Curious data are also to be found in the pages of Valerius Maximus, Lactantius, and others. Even in the *Talmud*, there is reference to a virgin's sleeping with the *Taphsar* before entering her husband's bed.⁹

Allusions to the *Droit de Seigneur*, or what would appear to be the same thing or something closely akin to it, are to be found in Arab writers from the ninth to the fourteenth century. According to Barros (1542), in the island of Canaria, "women might not marry until they had first been corrupted by those knightly gentlemen." And Cadamostus, speaking of the women of Teneriffe, says: "virgins could not become women until they had first slept with the lord a night, which was looked upon as a great honor."¹⁰

The *Jus primae noctis* is viewed by certain writers as a medieval manifestation of ancient slavery. The female slave, being the master's (the lord's) property, naturally owed the latter her body, and the master had the right to the first enjoyment of her body as a symbol of its and her, as well as the bridegroom's, vassalage. There is something to be said for this argument; and so modern and respectable an authority as M'Keechie gives it weight. Paolo Mantegazza sums up an opinion held by more than one, when he remarks:

⁷ Mantegazza, *Op. cit.*, p. 208.

⁸ Herodotus iv, 168; see Mantegazza, *Op. cit.*, *ibid.*

⁹ Mantegazza, *Op. cit.*, *ibid.*

¹⁰ *Ibid.*

³ *Le Droit du Seigneur, etc., et un grand nombre d'anecdotes sur le droit de cuissage et sur les variétés de ce privilège*, par Collin de Plancy, Paris, 1820.

⁴ A reference will be found near the close of *The Intelligent Woman's Guide to Socialism*.

⁵ Vol. 42, pp. 303-311.

⁶ See Léon de Labessade, *Le droit du seigneur (et La rosière de Salency)*, Paris, 1878. (An attempt at a bibliography will be found on pp. 180-92.) See, also, C. Borello, *Consiliorum sive, etc.*, Venetiis, 1598. For another nineteenth century treatise, Gustave Bascle de Lagrèze, *Essai sur le Droit du Seigneur*, Paris, 1855.

"There are many things, in the case of which it is of small importance whether or not we find them in the written laws, inasmuch as, imposed at first by violence, they later become customs more binding than those in any codex."

While it is to Scotland that the definitive form of the custom is commonly attributed, numerous traces of it are to be found in France and elsewhere on the Continent. Mention of it will be met with from Bayle's Dictionary down to Voltaire's *Essai sur les mœurs* and later. There are documents and characters which, even if not conclusive, go far toward establishing its authenticity.¹¹ Catholic authors, in defense of the purity of clerical manners, in particular, have sometimes taken a stand against its existence.¹² The German Karl Schmidt is one of those who oppose it on scholarly grounds.¹³ References to the *Droit* will be discovered in Keysler's *Antiquitates . . . septentrionales*¹⁴ (1720); in Renouleton's *Traité . . . des droits seigneuriaux*, of 1765, and in Boutaric's work on the same subject¹⁵ (1775). The custom evidently existed in Russia, as indicated by Westermarek.¹⁶

It is, however, to Scotland that we must turn for something more or less definite in the way of a legal enactment. It was King Ewen III (about 875 A.D.) who, according to Boece's Chronicle, erected his own vicious inclinations into

¹¹ Labessade, *Op. cit.*

¹² E. g., Louis François Veuillot, *Le droit du seigneur au Moyen Âge*, Paris, 1878.

¹³ K. J. Schmidt, *Jus primae noctis; eine geschichtliche Untersuchung*, Freiburg, 1881. For a consideration of Schmidt's views, see Mantegazza, *Op. cit.*, pp. 207-9.

¹⁴ G. Keysler, *Antiquitates selectae septentrionales*, Hanoverae, 1720, (*De jure cunnagii et marcheta*).

¹⁵ J. Renouleton, *Traité historique et pratique des droits seigneuriaux*, Paris, 1765. Boutaric, *Traité des droits seigneuriaux*, Toulouse, 1775.

¹⁶ Edward Westermarek, *History of Human Marriage*, 1894, pp. 78-80.

a law:¹⁷ *Ane othir law he maid, that wifis of the commonis sal be fre to the nobilis; and the lord of the ground sal have the maddinheid of all virginis dwelling on the same.* This law is cited, from Boece, in Sir James Balfour's *Practicks* of 1578, published in 1754. Boece is authority for the statement that this law was revoked, about the year 1089, in favor of a symbolic coin payment, the "merchatis of women," or *mercheta mulierum*, this being in the reign of Malcolm Conmore. As to the *mercheta*, or payment, as has been above indicated, there is no doubt that it existed; the question is as to its significance. It is said to have amounted, in Scotland, to half a mark of silver; although elsewhere, it was occasionally as little as from three to five pence.¹⁸ The reader may be referred to Leslie's *Historie of Scotland* (1578), translated by Father Dalrymple (1596) and published by the Scottish Text Society late in the last century (1888). Something on the *mercheta* will likewise be found in Skene's *De verborum significatione*, of 1597.

It is worthy of note, as M'Ketchnie points out, that Craig, the authority on early Scottish legal questions (died 1608) does not question the *Jus primae noctis*; Craig draws attention to the fact that it is not peculiar to Scotland, but comes from France, being a part of the *Jus feudale*. Lord Hailes, nevertheless, in his *Annals of Scotland*, of 1797, rather angrily scoffs at the tradition as "one of the worst fables in the fabulous history of Hector Boece." He quotes, in passing, Bayle's Dictionary. The *Droit* is also denied by a nineteenth century jurist of the country, Cosmo Innes, in his *Scottish Legal Antiquities*, of 1872. Hailes, Innes and others come in for a somewhat severe criticism at the hands of M'Ketchnie, who stresses the

¹⁷ See the Chronicle, Book III., Chapter V., in the translation of Bellenden (1530-33). *Boetius Scotorum historiae*, Paris, 1575 (first published, 1527). See, also, G. Buchanan, *Rerum Scotticorum historiae*, Edinburgh, 1715.

¹⁸ Mantegazza, *Op. cit.*, p. 209.

undoubted persistence of a body of Highland tradition on the point. It was this tradition that led Sir Walter Scott to state: "The ancient laws of Scotland assigned such a privilege to every feudal lord over his female vassals, though lack of spirit and love of money hath made many exchange it for gold."¹⁹ M'Ketchnie goes on to relate the circumstances under which, upon three distinct occasions, if tradition be correct, the right was exercised in the Scottish dominions. It must be admitted that a good deal of the element of folklore seems to be present in these cases.

The jurist's summing up is: "After weighing all the evidence, it is difficult to avoid the conclusion that the *Jus primae noctis* was the custom, at any rate in some parts of Scotland, in early times. There is no authority to the contrary, nor have any facts inconsistent with such a right ever been advanced by those who challenge it." Seemingly, as M'Ketchnie observes, the lord might at times even transfer his right to other parties, when age, physical disability or lack of desire, not to speak of mercenary motives, interfered with his exercising it. The right, too, appears to have been exercised symbolically upon later occasion, by the mere laying of a leg in the bride's bed.²⁰ This gesture is one also sometimes associated with marriage by proxy, as in the case of the nuptials of the Archduke Maximilian of Austria and Marie of Burgundy, with Louis of Bavaria acting as the proxy.²¹

As previously stated, the *Droit du seigneur* has given rise to, or contributed to the making of, any number of stage pieces, comedies and farces, prominent among them the famous *Mariage de Figaro*,²² with its character of the Count of Almaviva as a picture of lordly manners before the Revolution. Even the English dramatists, Beaumont and Fletcher, drew upon the theme. In addition to Voltaire's five-act

verse play,²³ there is a one-act piece by L. de Boissy,²⁴ and others.²⁵

All in all, the *Jus primae noctis*, or *Droit du seigneur*, represents something of a lacuna in anthropologic and medieval scholarship. It has not, for instance, been given the systematic treatment that has been accorded to such other subjects as Couvade, the Chastity Girdle, and the like. Mr. M'Ketchnie's legal paper remains, probably, the most scholarly and authoritative, as well as the most recent, summary.²⁶

S. P.

KLEIST, HEINRICH VON (1777–1811). German author, was born at Frankfort-on-Oder, October 18, 1777. After a career marked by unconquerable restlessness and various adventures, Kleist began turning out, in rapid succession, tragedies, comedies, novels and lyrics. His second play, *Penthesilea* (1808), was a powerful drama of the duel of the sexes. Three years later

²³ *Le Droit du Seigneur, comédie en cinq actes, en vers de dix syllabes*, de Voltaire, représentée à Paris le 18 janvier, 1762, sous un autre titre, *l'Œueil du Sage*. (Labessade.) There was a *reprise* of this piece in 1779, that proved a fiasco. (*Ib.*)

²⁴ *Le Droit du Seigneur, un acte*, par L. de Boissy, joué à l'Opéra-Comique, 28 juin, 1735. (Labessade.)

²⁵ See Labessade, *Op. cit.*, the tentative bibliography referred to in Note 6, above. A recent Italian play on the subject is the *Jus primae noctis, poema tragico in tre atti*, of Oreste Nigro, Roma, 1920.

²⁶ It will be noted that the definition adopted at the beginning of this paper tends to make of the *Jus primae noctis* a problem of medieval scholarship, rather than one in general anthropology. This would seem to be desirable. Attempts have been made to find the custom among savage tribes, such as the Eskimos and the Central American Indians, where the sexual tribute is paid to the tribal chief, the high priest or other dignitary. It has also been associated with marriage by capture. Those who assisted the bridegroom in carrying off his bride sometimes profited by it. Again, all the wedding guests upon occasion enjoyed the right, there being a certain analogy here with guest prostitution. Remnants have been seen of an earlier group marriage, but this view has been warmly contested. To come back to Europe, the *Droit du Seigneur* has been regarded by some as dating back to that ecclesiastic "Right of the Lord" decreed by the Council of Carthage, 397 A.D., a ruling that enjoined continence for the first night (later, for the first three nights) after marriage.

¹⁹ See *The Fair Maid of Perth* and other of Scott's novels.

²⁰ Mantegazza, *Op. cit.*, p. 209.

²¹ *Ibid.*, pp. 241–2.

²² *Le Mariage de Figaro, ou la Folle Journée, comédie, cinq actes en prose*, par Caron de Beaumarchais, représentée le 27 avril, 1784. (Labessade.)

Kleist, infatuated with the intellectual and musical attainments of Frau Henriette Vogel, agreed to her suggestion to die with her. On November 21, 1811, on the shore of the Wannsee near Potsdam, the poet carried out the erotic suicide-pact by first shooting the woman and then himself. Thus, at the age of thirty-four, passed away the most significant German dramatist of the Romantic movement. Kleist's *Penthesilea* is quoted by such leading sexologists as Krafft-Ebing, Iwan Bloch, Havelock Ellis, and Grete Meisel-Hess.

Grete Meisel-Hess (*The Sexual Crisis*, ch. xiii): Here is the daily tragedy of sex. In a work conceived on earth but reaching out to the stars, a modern poet magnificently symbolizes this process. Kleist depicts for us the struggle of the sexes and the drama of love-hate. We have here the pure spirit of tragedy, for it is the tragedy inseparable from human life that is typified in Kleist's *Penthesilea*. Two of the finest types of our species are selected as the protagonists of the drama, whose central idea is that the woman must conquer the man in battle to win the right to crown him with the gift of herself."

KNOWLTON, CHARLES (1800–1850), western Massachusetts physician, is of importance in the history of sexology chiefly as the author of the first medical handbook on contraception published by an American physician: *Fruits of Philosophy, or the private companion of young married people* (New York, 1832, anonymous; second edition, Boston, 1833). Knowlton may also be described as the co-founder with Robert Dale Owen of the American birth control movement. Influenced by Place, Carlile and Robert Dale Owen, Knowlton's medical experiences soon led him to see the importance of the "anti-conception art" as he called it. Doubtless also the fact that he was one of the most distinguished Freethinkers of his time in the United States made it possible for him to liberate himself from the prejudices current in his day and thus to produce the *Fruits*.

Bearing a distinguished New England name, Knowlton was a descendant of Mayflower stock. His father, Stephen Knowlton, was a farmer; his paternal

grandfather, Ezekiel Knowlton, a Revolutionary war captain. Young Knowlton received his medical training under the most trying difficulties involving self-support while studying with various physicians, eventually securing the M.D. degree at Dartmouth Medical College (1824). Following his marriage (1821), he settled in western Massachusetts, but had little practice. Subsequently he published his *Modern Materialism* (1829).

In the main, the *Fruits of Philosophy* was written in Ashfield, Massachusetts. Despite a few idiosyncrasies of phrase, the little book—it was a 32 mo—was a temperate discussion of the desirability on medical, economic and social grounds of putting into the hands of married people the means of controlling conception. Though he had been influenced by Francis Place, as is shown by the quotation in an appendix from Carlile's (*q.v.*) *Every Woman's Book*, which passage was in turn a quotation from one of Francis Place's handbills, Knowlton placed much less emphasis upon economic arguments for contraception than upon medical and social arguments.

The first chapter of the *Fruits*—we must use the second edition, for the copyright-deposit copy of the first edition in the Library of Congress was probably destroyed by fire in the middle of the last century—bears the title: "Showing how desirable it is, both from a political and social point of view, for mankind to be able to limit at will, the number of their offspring, without sacrificing the pleasure that attends the gratification of the reproductive instinct." Chapter two is devoted to an elucidation and criticism of various theories of generation followed by the author's own theory; while chapter three ("Of Promoting and Checking Conception") discusses several methods of prevention: the sponge, tampon, *coitus interruptus* and douching with chemicals. This last was Knowlton's chief method, the rubber pessary being unknown at the time (1832), since its development had to await the vulcanization of rubber in the 1840's. Knowlton believed he in-

vented the douching method. Whether or not this claim can be granted is an extremely delicate historical question. I used to think that Knowlton was probably mistaken in this claim. But since I have investigated the matter further, I am inclined to think that he deserves the credit as much as anyone else. It is probably no exaggeration to say that Knowlton's treatment of contraceptive technique is the most complete and scientific account from those of Soranos (second century A.D.) and Aëtios (sixth century A.D.) to those of contemporary texts.

Three thousand copies of the *Fruits* were sold in a year and a half. (By 1839 there were nine editions with an estimated circulation of 10,000 copies.)

Prosecutions soon followed. At Taunton, Massachusetts (1832), Knowlton was fined \$50 and costs for publishing the first, anonymous (By a Physician) edition of his little book; and at Cambridge, upon the complaint of a Lowell physician, he was, despite his angina pectoris, sentenced on December 10, 1832 to three months' imprisonment at hard labor in the Cambridge jail—within a mile or two of Harvard College. The sentence, which he served, aroused very little public attention; and there was no organized protest save that issuing from a small band of Free Inquirers in Pittsburgh. A few newspapers, however, thought the punishment both excessive and unwise.

Convinced of the fundamental righteousness of his campaign for public enlightenment, Knowlton continued the sale of the work but always used judgment in its distribution. Abner Kneeland, editor of the "Boston Investigator" and probably the publisher of the second edition of the *Fruits*, advertised and sold the book at his office and through his agents. Sales were so good as to induce a pirated edition of which no copy remains.

At the Greenfield, Massachusetts, prosecution (1834-35), which originated with an Ashfield clergyman, the case against Dr. Knowlton and his medical

partner, Dr. Roswell Shephard, was dismissed. A *nolle prosequi* was entered because, upon two previous occasions, the jury had been unable to agree.

There were no further legal entanglements in the United States; but an ill-advised English prosecution in 1877-1879 (*Regina v. Charles Bradlaugh and Annie Besant*) proved to be the torch ultimately to inflame the western world with a universal demand for democratized contraceptive knowledge. Bradlaugh and Besant re-issued the tract and fought for their right to do so in the courts. A decision, at first adverse, was reversed on appeal (See *The Queen v. Charles Bradlaugh and Annie Besant*, London: Freethought Publishing Company, 1878, pp. 324. The official citation is 2 Q. B. D., 569. Reversed by 3 Q. B. D., 607). This decision did much to clarify the legal situation in England. The distribution of contraceptive information is now legal within the interpretation of the common law of decency.

The effect of the prosecution was electric. The notoriety attending it increased enormously the circulation of contraceptive literature; and it is undoubtedly no coincidence that in this period the English birth rate began its marked trend downward. It is also quite possible that the prosecution publicity led to the introduction of the rubber cervical cap in the early 1880's by creating a demand for it. Upwards of a million or a million and a half popular medical contraceptive tracts were distributed in England in the next decade or two. The change was revolutionary. Doubtless it was the result essentially of broad social changes; but it is probably no exaggeration to say that the courage of Charles Knowlton was a catalytic agent hastening the change.

Norman E. Himes, *Charles Knowlton's Revolutionary Influence on the English Birth Rate* (New Engl. J. Med., 1928, 461-65); *Eugenic Thought in the American Birth Control Movement One Hundred Years Ago* (Eugenics, May, 1929). *Medical History of Contraception* (Baltimore, 1936).

N. E. H.

LAWRENCE, DAVID HERBERT (1885-1930). The works of D. H. Lawrence have become widely known for the erotic material they contain, and for the sexual theories they advance. During his lifetime, one of Lawrence's novels (*The Rainbow*) was suppressed in England, while a second (*Lady Chatterly's Lover*) was banned and subsequently pirated in the United States. Before his death, Lawrence's novels won him an international following, although

his verse, criticism, and essays remain, even to the present time, comparatively neglected.

Much critical and biographical material about Lawrence is now available, including his letters, which have been collected into one volume, ably prefaced by Aldous Huxley. The bulk of this material is not unimpressive, yet it is impossible to feel that the last word has been said, particularly about the physiological and the psychological aspects of Lawrence's complex personality. What he literally said in his books is not too difficult of exposition. The difficulty lies rather in what he meant and in the correct appraisal of the psychological forces which shaped his mentality. The core of his prophetic creed (we know that he thought of himself as a prophet) therefore remains a matter of dispute among his most penetrating commentators, who have sometimes neglected, at their peril, the evidence of his own words—"('ommandments should fade as flowers do."

It is generally agreed, however, that he saw the world as out of joint and that he sought the remedy for civilization in sexual terms; not in the sense that human life should be shrunk to the narrow confines of the erotic, but that it should be deepened and enlarged to the scope of the sexual, which, for Lawrence, was primordial, inescapable, and all-embracing. Lawrence seems to have come very near to equating the concept of human personality with the concept of sex. In consequence, those who judge his work sex-obsessed are right, although they should realize that to be sex-obsessed after the manner of Lawrence is to be captured by an all-inclusive problem—the welfare of the race.

Lawrence's tendency to see life in sexual terms is all the more emphasized in his writings by his characteristic type of expression. Even when he is not concerned primarily with sexuality, he nevertheless employs language of an erotic cast. In *The Rainbow*, there is a passage devoted to an intense religious

experience on the part of a principal character. Linked with his experience is the objective fact of a church interior. Lawrence permits his character to think and feel under the circumstances just enumerated, as follows:

"And there was no time nor life nor death, but only this, this timeless consummation, where the thrust from earth met the thrust from earth and the arch was locked on the keystone of ecstasy. This was all, this was everything. Then again, he gathered himself together in transit, every jet of him strained and leaped, leaped clear into the darkness above, to the fecundity and the unique mystery, to touch, to clasp, the consummation, the climax of eternity, the apex of the arch."

The erotic flavor of this language must be obvious to anyone who cares to follow it attentively. One has no right, however, to evaluate the passage as a piece of disguised eroticism because such indirection is utterly inconsistent with what is known about the temperament of the author. The view that this passage exemplifies the unconscious or the semi-conscious sexual mania of Lawrence is more of a possibility. Yet, at best, it is a shot in the dark, not only because the psychology of the unconscious is in its infancy, but also because we do not now know the full story of Lawrence's sexual history.

We do know, nonetheless, that a considerable proportion of the sex material in his fiction has a biographical basis. *Sons and Lovers*, the novel which made a big reputation for Lawrence, is rich in autobiographical content. In this book, we are given an account of Lawrence's relationships with his mother and father. They clearly suggest various angles of the incest problem. Lawrence also explores without reserve the content of his heterosexual experiences with various women, experiences which he probes and differentiates very thoroughly.

It is doubtful that any of his later novels add very much to the scope of the sexual data in *Sons and Lovers*, although they unquestionably develop the fundamental themes beyond anything to be found in this comparatively early

work. Lawrence passed through numerous psychological phases, believing as he did in the great law of flux. But the essential cast of his sex-dominated mind does not seem to have evolved beyond easy recognition.

True, he subsequently took up the themes of homosexuality (*Aaron's Rod*) and lesbianism (*The Rainbow*); he likewise hunted for religious ultimates in extremely unorthodox Christianity (*The Man Who Died*), a short story, and in primitive Mexican religion (*The Plumed Serpent*). Moreover, Middleton Murray thinks that Lawrence finally reached a stage of sexual impotence which forced him to embrace theories of extra-phallic sexual expression. But Murray does not prove his contention (*Son of Woman*), which remains without support, even from such an authoritatively placed person as Lawrence's wife, the former Baroness Richthofen. Freida Lawrence has indeed written a vividly reminiscent book about her husband (*Not I, But the Wind*), but it is, unfortunately, a study that raises more questions than it solves.

Lawrence held pronounced views on a great variety of subjects; his work, however, not ignoring such pseudo-scientific efforts as *Fantasia of The Unconscious* or *Psychoanalysis and the Unconscious*, nor forgetting his marvelously sensitive poetry about animals and his vigorously original literary criticism (*Studies in Classic American Literature*), remains above all the embodiment of what we commonly call the sexual. His last important book, *Lady Chatterley's Lover*, like his first, *Sons and Lovers*, is dominated by the sexual theme; is, in fact, more relentlessly erotic than anything he previously produced.

The issue accordingly hangs upon whether we accept the usual conception of the sexual or the very special one so resolutely held by Lawrence himself. His detractors charge that he could not see the world apart from sex. Those who cherish his name put him forward as a man for the ages and as a martyr,

whose prophetic vision would not allow him to see sex apart from the world.

Horace Gregory, *Pilgrim of the Apocalypse* (1933); Aldous Huxley (editor), *The Letters of D. H. Lawrence* (1932); D. H. Lawrence, *Sons and Lovers* (1913), *The Rainbow* (1915), *Lady Chatterley's Lover* (1932), *Fantasia of The Unconscious*, an essay (1922); Freida Lawrence, *Not I, But The Wind* (1934); John Middleton Murray, *Son of Woman* (1931); Annis Nin, *D. H. Lawrence* (1932), a limited edition, published in Paris.

W. M. II.

LEDA AND THE SWAN. In classic mythology, daughter of Thestius and wife of Tyndarus, mother of Helen, Clytaemnestra and the Dioseuri (*Odyssey*, xi, 298; see Apollodorus iii, 10). She is best known, in erotic art and symbolism, in connection with the famous swan, whose form Jove took when he visited her. The result of his visit was two eggs, from one of which sprang Pollux and the beauteous Helen, while Castor and Clytaemnestra came from the other.

See Ovid, *Heroides*, xvii, 55; *Metamorphoses*, vi, 109; Horace, *Odes*, i, 12, 25; etc. Following her death, Leda, according to the Christian Lactantius (i, 21) was apotheosized as Nemesis. "Leda's swan" has in general come to stand for cunnilingus.

LEGISLATION OF GREEKS AND ROMANS ON SEX. All communities, ancient and modern, have discriminated between those sex relations which are licit and those which are not. As a rule, the basis of the discrimination is the incest-taboo which varies with all tribes. Indeed the incest-taboos are by way of being the most distinctive feature of any particular people.

The ancient Greeks also had these taboos, and in historical times the forbidden degrees of one city were different from those of another. But there was the general similarity that ascendants and descendants were taboo and usually sisters on the mother's side as well. Among Homeric Greeks, the father's wife or concubine was equally forbidden, as was generally the case in all patriarchal societies.

Otherwise it is difficult to find any

restriction on sex relations. The Homeric Greeks were monogamous in the sense that each man had only one woman whom he called his wife or consort. But as far as he could afford to keep them, he might have concubines (*pallakai*) free or slave, and the only difference between a wife and a concubine was the difference between equality and disparity of rank. Doubtless, not even a king could induce two women of his own rank to be his wives simultaneously.

In this qualified sense monogamy was undoubtedly the usual practice in the Homeric period and became, shortly afterwards, a rule sufficiently established, so that it could be said that bigamy or polygamy was unlawful. But it was nowhere a punishable crime. The second marriage was merely void. Possibly a second marriage might expose the man to the penalties for seduction.

Sex relations, however, between a married man and foreigners, prostitutes, or women of lower social classes continued to be common and not unlawful. Particularly, it was assumed that a man's female slaves were at his disposal. If children were born of these unions, they were illegitimate, but were likely to be emancipated and treated with paternal affection. It is well to remember that despite the contradictions it involved, a favorite theory of heredity in the Mediterranean assumed that the seed was wholly the man's and that the woman furnished merely the soil in which it developed.

But the idea of illegitimacy implies that certain unions were at least unofficial. A proper and legal marriage among the Greeks was not merely monogamous but it could, as a rule, be contracted only between citizens of the same community unless by treaty or by special dispensation other persons obtained the privilege (*epigamia*). The child of an Athenian man and a free Corinthian woman of whatever rank was as much a bastard as if the

woman were a slave. Similar rules prevailed in most of the Greek states.

Extra-connubial intercourse on the part of a married man was not adultery. That term was restricted to such intercourse on the part of the lawful wife. It created a right in the husband of divorcing his wife, retaining her dowry in whole or in part and in demanding a restoration of the bride-price, if one had been paid. It involved, further, social disgrace in which the wife's family shared. But it apparently did not subject the wife to any officially inflicted criminal penalties.

The adulterer (*moichos*), on the other hand, was in most communities guilty of a crime for which severe penalties might be inflicted. In most places the sanction was rather self-help than a formal magisterial punishment. The husband could seize and hold the adulterer for ransom, or could with impunity heap indignities on him, even inflict severe bodily tortures, but in general he could neither kill him nor castrate him. In Athens, however, because of the essentially indeterminate character of Athenian penalties, it was possible, although not usual, that in the ordinary prosecution for adultery the death penalty might be demanded. It is quite certain that the husband might kill the adulterer if he took him in the act, not, however, if he came upon him afterwards or if he enticed him to his house in order to take vengeance.

Open and notorious profligacy of the husband entitled a woman to ask for a divorce. But that could be done only through her family guardian, her father, brother or son. Ordinarily she would be dissuaded, even if her wrongs were acknowledged. If, however, the wife was an heiress who by Attic law was compelled to marry certain next of kin, she might resent any concubinage on his part and public opinion would support her in her suit for divorce.

Seduction of a free woman, whether

maid or widow, was a punishable offense. The woman was deemed to be "corrupted." The word "corrupt," *diaphttheirein*, was the ordinary word used for spoiled commodities, and recalls the half-comic euphemism "ruin," for the same situation to-day. The social value set on female chastity in Athens was high and this social value had a distinctly economic aspect. The seduction of another man's slave-concubine was, of course, not adultery, nor was it, properly speaking, seduction at all, but it was a most undoubted invasion of a property right.

The laws which forbade rape and abduction were not laws of sex regulation. These offenses came under the general provision of laws which forbade violence or assault. They were punished just as those acts were. An assault was no more or less grave, because its purpose was sex gratification. To be guilty of an assault was in any case a serious crime, punishable by death, if the popular court chose to set that penalty. The degrees of heinousness were based on the rank of the person assaulted. Rape of a freed-woman or even a prostitute was punishable, but it is not likely that the offense would be punished severely. Foreible abduction of the virgin daughter of a free citizen might well be capital.

Prostitution appears fairly early in Greek history as the concomitant of increase in population and wealth. If there is any appreciable period between male puberty and marriage, sexual satisfaction of some sort is practically inevitable for the young men, and the rapid extension of commerce brought into all larger communities a number of foreign women and female slaves who were quite outside the laws that limited or penalized sex relations. Dealers who sold women for this purpose had long been known, but the purchasers were usually older men of the propertied classes. Pandars, however, who hired out their female slaves for short periods or for a single night

were part of every mercantile group and they looked to poorer men or to young men for their profits. There were soon added free foreign women or freedwomen who trafficked for themselves, and for them the usual word was the term *pornai*. When Greek cities became centers of luxury and elegance, the higher grades of prostitutes received the less offensive name of *hetairai*, "companions" or "friends."

Nowhere in Greece was prostitution or traffic in women forbidden by law. It was scarcely known in Sparta among the full Spartans, but that was due to the severely regimented training this small and highly militarized caste received. To other Greeks, the absence of prostitutes in Sparta was taken to be a rule of the same sort as that which demanded spare diet and severe exercise of young Spartans. Popular gossip declared that the lack of prostitutes was compensated for by conniving at sex relations between Spartan boys and girls, and by a sort of eugenic communism of women among adult Spartans. Under all circumstances, the situation was quite exceptional and showed a later tightening of rules rather than a survival of rude and primitive virtue.

Free women might, if they chose, openly become prostitutes with no other penalty than a loss in social standing. But just as seduction was punishable, so a husband, father or brother who hired out the women subject to his control as prostitutes was liable to severe penalties. It was one of the earliest of "public" crimes, that is, an offense for which any citizen might prosecute the offender and its establishment at Athens as such a public crime was ascribed to Solon.

Side by side with this attitude, there was, both in Athens and throughout Greece, a general tolerance of prostitution as far as foreign women were concerned. There was besides a distinctly religious element associated with this institution. In most religious

precincts the sexual act would have been sacrilege, just as most other physical functions would have been, and just as a dead body would have been a pollution. But in certain shrines, especially some shrines of Aphrodite, sexual intercourse might be taken to be a part of a religious ritual.

The institution of sacred prostitution, *hierodulia*, was of ancient establishment in Greece. The fees went to the temple in which these prostitutes were priestesses of a sort. There was one apparently in Athens and in Corinth, the great temple of Aphrodite Melainis had in 490 B.C. one thousand hierodules. Xenophon, the son of Thessalus, vowed a thousand hierodules to Aphrodite for the Olympic victory for which Pindar wrote the 13th "Olympic ode" in 464 B.C.

From the fifth century on, the larger Greek cities were filled with prostitutes of all types. Their ordinary relations were assumed to be with the younger men who were frequently encouraged to visit them, but it was notorious that all types of citizens were their patrons. Publicly established houses were found everywhere as a means of attracting merchants and other visitors, especially in seaports like the Piraeus or Corinth. There were a great many privately run brothels, too, some of which made real pretensions to elegance. And, of course, there were individual prostitutes who varied in rank and station from rich and powerful *cocottes*, like Phryne, to wretched creatures who lay at the head of bridges and solicited passers by invitations scratched on their sandals.

All these persons were subject to some regulation but the methods varied. In Athens, the board of *astynomoi*, which had many police powers, supervised the female musicians, and dancers who were officially prostitutes as well as entertainers. A maximum price was fixed which was the not inconsiderable sum of two drachmae, i.e., two hundred obols, at

a time when a workman's daily wage was a few obols. There was likewise a prostitute's license tax, the *pornikon*, collected in the usual way by tax farmers. There seems to have been no other regulation.

The statement often appears that prostitutes in Athens and in many other Greek cities wore a distinctive dress so that they might easily be recognized. This is probably a rationalization of the fact that they did in fact dress differently from other women, because they wore clothes that were meant to be both striking and provocative. A great many Greek communities had sumptuary laws which often restricted the value of the attire free women might assume in public and forbade the use of certain especially costly stuffs. Laws of this sort were often enforced by a special officer, the *gynaikonomos*, but prostitutes were specifically exempted. As may well be supposed, these laws were openly disregarded so that moralists frequently inveighed against the immodesty of women who aped the flaunting garb of vice instead of being content with the drabness of virtue.

Nowhere does there seem to have been a regulation of prostitution that was predicated on an interest in public health. The history of venereal diseases in the ancient Mediterranean region has often been written but there are still many controversial matters, among which the existence of syphilis or gonorrhea is the most important. The medical sources describe diseases which may well be those we know under these names, but, if they existed, they cannot have had the virulence they acquired in medieval or modern times.

The vast literature of satire and obscenity, the enormous mass of inscriptions and vase paintings which have thrown a wholly new light on ancient life, ignore altogether what one might suppose would have been a particularly attractive subject matter. The fact of infection in other diseases was

well known and hygienic regulations of various sorts were attempted here and there. But there is no indication that the governmental authorities regarded the vast numbers of prostitutes and brothels as a danger to the health of the community.

Accordingly, neither morals nor considerations of public welfare seemed to the Greeks to demand a regulation of prostitution by law. Even Plato in the "Laws" permits public brothels which are, however, to be visited secretly. Aristotle is more open. The only sanction was one of manners. It was indecorous to be unable to check the public expression of sex desire just as it would have been indecorous to be similarly unrestrained in other things. Except to this extent, prostitution was not a matter of social concern.

The attitude of the Greeks toward abnormal sexuality was much the same as their attitude to prostitution. Pederasty existed all over the Greek world. For that we do not have to rely merely on the boast of Herodotus that this custom was peculiarly Greek, and on the example of Greek statesmen and poets. Among the oldest Greek inscriptions are the obscene memoranda of homosexual acts on the hills of the Doric island of Thera.

The laws against seduction, however, were enforced here. The corruption of the sons of free citizens was an offense of the same kind and quality as the seduction of a free woman. But the laws against seduction did not apply to foreigners, slaves and freedmen and one might as openly entertain sex relations with men as with women of these classes.

There was, however, a special situation. A free woman who had extramarital relations lost in social standing whether she was paid or not. A free citizen, however, who was the passive partner in pederasty was subject to serious disabilities, if, and only if, he did so for pay. In that case he was deprived of all civic rights. He became *atimos* and above all he could not

exercise the right of addressing the public assembly. If he none the less did so, the penalty was death, although we hear of no occasion in which this penalty was inflicted.

Regulations like these were found in many other places, but not in all. They indicated the attitude general among the Greeks that eroticism in any form was neither a sin nor a crime, but that the sale of one's body was a personal degradation. It was a justifiable assumption on the part of the Jews and the Romans—to name only these two—that pederasty was a Greek vice.

Other forms of abnormality, Lesbianism, bestiality and the like, were relatively rarer but also did not invite governmental attention. They were treated as ludicrous or indecorous, but nowhere were they penalized.

Among the Romans the incest taboos were much more numerous. They included not only ascendants and descendants, and both half sisters and full sisters, but also more remote relationships, aunt and nephew, uncle and niece. Originally the taboo went as far as first cousins and even beyond. There were some relaxations during the early Empire. First cousins were permitted to marry. At one time a man might marry his brother's daughter but not his sister's daughter. Later, however, the former became taboo once more.

The taboo encompassed not only blood relationship but also relationship by adoption and by affinity. A man might not marry his step-mother or step-daughter. Step-brothers and sisters, however, if they were not related in blood might marry. Afterward, by special legislation, a man might not marry his brother's widow or his deceased wife's sister. In every instance the relation by affinity was the same, whether the woman through whom the relationship was traced was a wife or a concubine. The incest-taboo existed even when the relationship had been dissolved by divorce or

death. It existed even after the emancipation of natural and adoptive children, although technically legal relationship was destroyed by emancipation. It existed even when the relationship was through illegitimates.

Marriage within these degrees was void and the children illegitimate. But any sexual intercourse within these degrees, whether matrimonial or not, was incestuous. Incest during the Republic was a moral offense and could, of course, be made the subject of censorial discipline. A man might be removed from the senate for it. Apparently it was also a crime but the punishment was not absolutely fixed. There is some indication that in cases of specially abhorrent incest—father and daughter, mother and son—the punishment was death. After Augustus, incest became a serious crime, punishable under regular procedure by infamy, a loss of civic rights, and later by exile and confiscation. Finally under Diocletian it was made capital. Naturally, only wilful incest was a crime, not incest due to mistake.

As among the Greeks, only citizens of the same community could contract a valid marriage, unless the privilege of *connubium* had been duly acquired by treaty or statute. But except for the fact that the marriage was void and the children illegitimate, no other penalty was provided. Citizenship included freedmen, which was usually not the case in Greece. Bigamy likewise rendered the second marriage void but, unless this second marriage came under the head of *stuprum* or seduction, it was not in itself punishable. It became punishable under Diocletian doubtless as a step toward legal uniformity. Polygamy had been legal in many parts of the Empire, notably in Syria and Africa.

The institution of concubinage at Rome was not, as in Greece, a form of legalized polygamy. A man might have either a wife or a concubine. He could not have both. A concubine was a woman of inferior rank with whom a

fully valid marriage could not be contracted, but she was otherwise treated as the equivalent of a wife. To seduce her or hire her out was *stuprum* or *lenocinium*. Illicit intercourse with her was adultery. She was merely not a Roman matron. Frequently, as we learn from inscriptions, she was the freedwoman of the husband.

After the passage of the Lex Papia-Poppaea and the Leges Juliae under Augustus, senators were forbidden to marry freedwomen, or women who plied infamous trades. Among these classes were prostitutes, servants in any public place of amusement or entertainment, and finally actresses, dancers, musicians, or mountebanks. Marriage with a woman of this class was void and for the man constituted a punishable offense.

Extra-marital intercourse with a previously chaste free woman citizen was *stuprum*, an offense which thus might include adultery. This was a moral rather than a legal offense during the Republic. Under Augustus it became subject to the quasi-capital punishment of exile. Later, like most sex offenses, it was made capital. If the woman was a Vestal Virgin, it was sacrilege punishable by exile, confiscation and perpetual infamy. But *stuprum* could not be committed against slaves or the women later included in the classes a senator might not marry. Sexual relation with such women was free from either moral or legal penalties.

As far as the woman was concerned, she was as guilty in a case of *stuprum* as the man and might be similarly punished. In the case of the Vestal Virgin, both during the Republic and after, she was buried alive, that is, placed in a tomb and starved to death there. And just as in the case of men, those women with whom *stuprum* could not be committed, could also not be punished for it.

Adultery was treated much as it was in Greece, with certain characteristic differences. In Rome, as in Greece,

adultery was any intercourse of a married woman with a man not her husband. His extra-marital intercourse with unmarried women or with foreigners, slaves, freedwomen or prostitutes was not adultery. If a woman committed adultery, her husband could divorce her and retain part of her dowry. In case of flagrant infidelity on his part, she might divorce him, but no penalty was inflicted. Obviously she rarely sought a divorce that would deprive her of her rank as a matron and of the company of her children. That a woman should calmly endure her husband's infidelities was almost a social axiom.

Again, as in Greece, the worst offender in adultery was not the woman, but her paramour. It is the technical word for him, *adulter*, which gives the name to the offense. If taken in the act, he might with impunity be killed, castrated or otherwise mutilated by the husband. But he could not be killed if he was not caught in *flagranti*. As far as the wife was concerned, her husband in ancient times, when a wife came under her husband's *manus*, could doubtless kill her as well as the adulterer. In historical times *manus* was rare and with it went the husband's power of putting his wife to death for this or any other offense. Her father, however, had such a power and might exercise it, even against the husband's wishes.

Adultery was further made a public criminal offense under Augustus and the penalties were intensified until, under the Christian emperors, they became capital. It need hardly be said that they were as rarely inflicted as they have been in those modern states, in which adultery is likewise a criminal offense and likewise extremely common. Adultery and *stuprum* were sufficiently alike that adultery could not be committed with even married women of the classes already described. To be sure, the right of self-help existed here too as well as the civil consequences of adultery.

Prostitution appeared in Rome as in Greece, as soon as a leisure class developed. The earliest prostitutes seem to have been Greek-speaking, which is a little strange, since so many other elements of luxurious living were immediately acquired by Romans from the Etruscans. At any rate, *congruacari*, *pergruacari*, "to play the Greek," was the ordinary term for frequenting brothels. Just as in Greece, there were individual prostitutes who were famous beauties and sold their favors for huge sums, and miserable outcasts who carried on their business in the streets for a few coppers. The city also swarmed with pandars (*lenones*) who had female slaves for sale or hire or who kept brothels of all types and sizes and character. A common place of assignation for prostitutes was one of the numerous arches (*fornices*), a fact that has given us our word "fornication."

All this was completely lawful, provided the women were not free Roman citizens. If they were, the act was a crime on the part of anyone who hired out for purposes of prostitution, *lenocinium*, or who enticed her to become a prostitute. A woman might, however, of her own accord and for her own gain, become a prostitute, in which case she not merely suffered social degradation, but became infamous, i.e., she lost her civic rights, the right of making or witnessing a will or receiving a legacy, as well as certain other procedural privileges.

Prostitutes were forbidden to wear the dress of Roman matrons but as Roman matrons were not forbidden to wear the dress of prostitutes, the moralists of the Empire had much occasion to be scandalized at the shamelessness of ladies of the highest society. Many Roman prostitutes paid a license tax or their owner did. In some places, maximum prices were established by law. Public brothels managed by the city were common but they did not exclude private competition in fact or in law.

Prostitutes had several other disabilities. They could, of course, not contract valid marriages with men of the upper classes—senators at Rome, members of the municipal councils elsewhere. They could occupy only certain restricted seats at the public spectacles. But they did not have to live in restricted areas of the city, although, as a matter of fact, they were likely to do so. A prostitute could scarcely maintain an action for the amount promised. Such a contract would contain an immoral consideration. But it was decided as early as the time of Augustus, and confirmed by later decisions, that money paid to her could not be recovered. "It is immoral to be a prostitute," declared Ulpian, "but not immoral for a prostitute to receive her price."

Just as in Greece so in Rome there is no trace of any hygienic regulation of prostitution and no police provision in regard to them which is based on their danger to public health. But there were police regulations based, perhaps, on the danger of fraud and theft practised on Romans by prostitutes and their keepers or owners. The control of prostitutes was in the hands of the aediles who performed most of the functions of a city police. They were required to keep a list of prostitutes, but that does not in the least imply that the number was in theory limited or that they were supervised in any stringent fashion. Lists were kept, after all, of all citizens, and these women who were subject to special disabilities at law formed a real section in the roster of the city population.

But it seems that a maximum price only could be charged and that a tax was imposed which was varied with the amount the particular woman actually received for a single act of intercourse. We may readily suppose that the fixed amount in either case was something of a solemn farce. To restrict such matters has been found difficult or impossible even for more controllable com-

modities than sexual indulgence. At most these regulations could be enforced in the public brothels. Elsewhere they were doubtless a ready instrument of oppression by petty officials.

Pederasty among the Romans was classed as a form of *stuprum*. It could, therefore, be committed only with a free-born Roman citizen. Its Greek origin was well known but it did not shock Romans as much as it did many Asiatic peoples. During the Republic, it was punishable principally by a fine, later fixed at 10,000 sesterces (about \$300) by the Scatinian law. Whether the laws of Augustus dealt with it or not is doubtful. It is, however, not doubtful that, in so far as it was *stuprum*, pederasty was made a capital offense some time before 200 A.D. and even the attempt punished with exile, while if it was committed with a minor, the slaves or freedmen who were the go-between would suffer death. The passive partner in the homosexual act was guilty of ordinary *stuprum*, but was condemned to the loss of half his property when the crime was made capital for the active participant. Both were made subject to the death penalty by a decree of Constantius in 342 A.D. Justinian in 549 A.D. announces mercy for repentant offenders, if the Church authorities recommended it.

Sexual satisfaction was all the more readily obtainable at Rome, as at Greece, because of the institution of slavery. The owner of a slave, male or female, had of course complete control of the slave's body either for his own pleasure or as a means of profit. But for women, likewise, intercourse with their male slaves was not a punishable offense till the time of the Christian emperors. However, if a free woman had intercourse with the slave of another person she could under special statute, the *senatusconsultum Claudianum* (52 A.D.), be punished by forfeiture of her liberty and she might become a slave of her paramour's master. The rule was abolished by Justinian.

The striking severity of Roman legislation in sex matters as compared with the notorious laxity of Roman manners which Latin literature attests, contrasts unfavorably with the corresponding Greek attitude. The Roman law in this respect creates the unfortunate impression of a conscious hypocrisy, a moral dualism under which modern codes have suffered ever since. Nor is it possible to ascribe this fact to Christianity, since it already characterized the legislation of the Empire since the laws of Augustus. It is obviously a compensatory device and it has the extreme viciousness that it can be used, and in fact was used, as an instrument for oppression and blackmail.

But, it is only in modern times that fornication, prostitution, or homosexuality, as well as any other form of perversity, have become in themselves criminal offenses. Even at Rome and particularly in Greece, the gravamen of a sex offense was, first of all, the inherent ignominy of selling sex gratification, and, secondly, the fear that certain upper classes would be dragged into this ignominious business. Sexual indulgence as such, both normal and abnormal, was not penalized and the social structure afforded ample opportunities which the law did not prohibit and, in some respect, encouraged. This, to be sure, involved the recognition of lower and upper social strata. But even in the case of the latter, rape was a crime. Modern society, which maintained the social distinctions of the Romans and even intensified them, has in its legal sex regulations enormously multiplied all the evils inherent in the contradiction the Roman system exhibited, between the moral code the law professes to enforce and that which is actually practised.

M. R.

LENA, a procuress. Ulpianus, in the *Digest*, xxiii, 2, 43, defines the *lena*: "We term *lenae* those women who prostitute the *quaestuariae*. The word occurs as far back as Plautus, *Asinaria*, i,

3, 23. Ovid (*Amores*, iii, 5, 40) speaks of a *lena anus*, an "old go-between."

Laeroix (*History of Prostitution*, part i, ch. xvi) observes: "At first, *leno* was applied without distinction to the two sexes, as if the pimp were neither male nor female; but later, the feminine *lena* came to be employed more accurately to indicate the intervention of women in this odious traffic."

LENO, a pimp, panderer, procurer. The word occurs as early as Plautus (Prologue to the *Capteivi*, 57) and Terence (*Adelphi*, ii, 1, 34). And from the earliest times, among the Romans as among other peoples, the character of the pimp is to be seen as one marked by lies and false promises. This is indicated alone by the adjectives which are applied to him. With Plautus, it is the "lying pimp" (*perjurus leno*); Cicero (*Pro Roscio Commodo*, 7) speaks of the *improbissimus et perjurissimus leno*; while Horace (*Epist.*, 11, i, 172) makes use of the adjective *insidiosus*. Along with the feminine form, *lena*, and the word *lenocinium*, as defined by Ulpianus, the term came down through the Middle Ages to modern times, in legal, theological and other phraseology.

LENOCINIUM. The Roman legal term for the pimp's trade, whether practised by male or female, a term which has continued to modern times. Ulpianus gives a very clear definition, in the *Digest*, iii, 2, 4: "He plies the procurer's trade who has women in bondage whom he exploits for gain; and the one who exploits free women is in the same class."

Plautus, *Epidicus*, iv, 2, 11, and the *Mercator*, ii, 3, 76; Suetonius' *Tiberius*, 35; see also the *Digest*, xxiv, 3, 47.

LEX JULIA ET PAPIA POPPAEA, legislation suggested by Augustus for the regulation and promotion of marriage, and punishment of celibacy. A celibate could not inherit unless he married within a hundred days; otherwise his gift became *caducum* (without an owner) and passed to the State. Under the Lex Julia a widow was obliged to marry within a year of her husband's

death, and a divorced woman within six months of her separation; the *Lex Papia* doubled these periods of grace. The penalties remained in effect until the man reached sixty and the woman fifty, but if they disobeyed the law before attaining the age of immunity, the penalties became permanent. The law granted privileges to the parents of several legitimate children, while childless couples forfeited one half of every legacy bequeathed them. This portion of the law could not be evaded by adopting children.

Pliny the Younger, in his *Epistles*, has various references to these laws. Writing to Fabatus about Calpurnius Tiro, he says (vii, 16): "He got the start of me, indeed, in the Tribunate, by the privilege which the law gives to those who have children." The emperors reserved the right of granting to childless citizens the privileges ordinarily given to fathers of three legitimate children. Pliny, upon receiving this favor from Trajan, wrote to his benefactor (x, 2): "You have occasioned me inexpressible joy by deeming me worthy of the privilege which the laws confer on those who have three children." Pliny successfully requested the same privilege for the celebrated author, Suetonius Tranquillus (x, 94): "Two reasons concur to make the privilege which the law grants to those who have three children, extremely necessary to him; he is legatee to several of his friends, and has had ill success in his marriage. Those advantages therefore which nature has denied to him, he hopes to obtain from your goodness, by means of my intercession."

LIBERA. The Italian Proserpine, daughter of Ceres and sister of Liber. The chief interest that Libera holds for the modern sexologist and anthropologist is the fact that her pagan cult has been mingled with the Christian-Catholic one paid to the Madonna, as a bestower of fertility upon sterile women.

This points back to Ceres, goddess of the earth's fruitfulness, and to Persephone, emerging from the bowels of the earth. There is an association, also, with the Latin *liber*, free, the birth of the child being a freeing, as Proserpine was freed from Pluto's realm. Just as the primitive mythology of the Italian peninsula, with its priapic, Bacchic, and other elements, came to mingle with that which was imported from Greece,

so in the popular and especially the peasant mind, the old pagan deities have tended to become confused with the saints of the Christian calendar.

"If a woman is pregnant and would have a child," a contemporary Italian story-teller has one of his characters say, "what she wants to do is to make a pilgrimage to Our Lady of Libera at Pratola Peligna; for only Our Lady of the Loins can help her. She must go to Pratola and, of an evening, have herself locked in the church of Our Lady of Libera. All night long, she must lie stretched out on the bare stone floor, with that part of her body which is stubbornly unfruitful touching the floor. If nine months after that, she doesn't give birth to a child, it means that her case is incurable" (*Mr. Aristotle*, by Ignazio Silone, translated from the Italian by Samuel Putnam, 1935.) The phrase, "Our Lady of the Loins" (*Madonna dei Lombi*), is to be noted.

An inverse form of the same superstition is related by the same writer in connection with a popular remedy for lumbago: "For a person who has the lumbago, there is only one worthwhile remedy. He should go to some shrine and wait until it is night, then lie face downward in such a way that his bare belly touches the stone pavement; and while he is lying like that, a woman who has given birth to twins should walk over him three times with a lighted candle in her hands, reciting as she does so three Hail Mary's to Our Lady of the Loins. The one who does this will be cured of his lumbago. Yet these are things that the doctor won't explain to you, because it's to his interest for your lumbago to last."

The symbolism here is plain, the woman who has received to an unusual degree the gift of fertility passing the well-being of her own loins into those of the lumbago-sufferer—it is "Our Lady of the Loins" who is again the patroness. Again, too, the association with *liber*, in the sense of a *freeing* from pain.

Cicero, *De natura deorum*, ii, 24; Ovid, *Fasti*, iii, 512.

LIBERALIA (LUDI LIBERALES). A festival in honor of Liber, the old Italian god of the vine, later identified with the Greek Dionysus, or Bacchus. This festival, a correspondent of the Dionysiac rites, was celebrated on March 17, the day on which Roman youths donned the manly toga.

LITERATURE AND LOVE. The object here will be to trace in outline the view of love as reflected in literature

from earliest historic times to the present, from the Sanskrit to the Soviets.

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Meaning of the "Love-Books"

Not infrequently we hear the expression, "love-books of the world," "great love-books of the world," etc. The bookseller long since has made a category of "curiosa," and has gone on to distinguish critically between the *erotic* and the *pornographic* item. Works of this sort, appearing often in expensive format and in "limited" or "subscribed" editions, have, at least until the present Depression era, lured the collector. In connection with such books, a special type of illustration has grown up, to constitute almost an art in itself, of which Jean de Bosschère is possibly the best known, and many would say the greatest, practitioner.

The collectors of these works, too, tend to form a distinct class. The publisher or book-dealer in touch with the

trade will inform us that they are, in very large part, business or professional men, doctors, lawyers, brokers, army officers, and the like.

The love-literature of the world forming, in a manner of speaking, a world of its own, it is natural that the masterpieces and many other productions in the genre should be translated from one language to another; and here again, we have something like a trade, one that the reputable man of letters and even the literary creator of distinction has not been ashamed to practice upon occasion in the past, sometimes under a pseudonym and by way of eking out a livelihood, as in the case of the late Guillaume Apollinaire, the French translator of *Fanny Hill*, and at other times under his own name, as in the case of the poet-novelist, Richard Aldington, who undertakes the English rendering of the *Decameron* as a dignified literary and scholarly task.

What, then, it may be asked, is the meaning of this literature? Does it represent merely a lighter, more frivolous side of literature and of life, an amusement or relaxation for the mind, something at not a far remove from the chorus girl or the burlesque show? There is undoubtedly this side to it. The literature which we are here considering has among its followers, on the one hand, those with an unhealthily or abnormally active interest in everything pertaining to sex, and on the other hand, those who have a wholesome, rollicking, altogether normal attitude such as is found at its highest point of literary expression in Rabelais. These latter would likely pass up the item with nothing but smut to commend it; they would find it too naïve and repellent in its baldness; they ask for literary quality, or at least humor, where the reader of the other sort is omnivorous, or may even prefer an undiluted smut to the higher-grade article. This leads to the bookseller's well known distinction referred to above, as he finds that he has more than one class

of customer for his (usually) under-the-counter wares.

But is this, still, the only significance in the "love-books"? If we put aside for our purposes from now on the purely pornographic work, we shall be able to discover among the "love-books" alone, disregarding for the moment those novels, poems and other literary productions which may have an erotic element, but which do not properly come under the classification here dealt with, a constant reflection of the social and love-views of the various epochs that gave birth to them. Such a work as the *Decameron*, for instance, is more than a collection of merry tales; written for the new *popolo minuto*, or upspringing bourgeoisie, it has at once a broader social and a linguistic significance.¹ It is, however, the concept of love that concerns us here; and this concept we shall find varying from age to age; but if we attempt to trace the conception of love in its variations, its evolution, down the ages, we shall find that the so called love-books are in themselves not enough, that we shall have to take in the wider range of creative literature as a whole.

Vedic and Other Primitive Conceptions of Love

By way of providing anything in the way of a systematic historical account of the erotic motive, one is forced to go back to very remote times and peoples, where we find it existing under a cosmic-interpretative or cosmogonic aspect, as a world-view or religion; one must go back to the old Aryan lingam-worship, Śiva and his sacred bull (the Nandi), etc., and beyond Śiva, to the solar Pushan, who upon one occasion in the Vedic texts receives equal credit with Soma as being the progenitor of heaven and earth, and whose

¹ Even in a purely—and cynically—erotic work such as *La Cazzaria* of Arsiccio Intronato, we find interpolated an extended discussion of the language question, the question, that is, of the vulgate (the new-shaping Tuscan tongue) versus the Latin as a medium of literary expression.

function it was to conduct the bride to the groom and to confer prosperity upon her. True, it has been pointed out that the attribute of the lingam is foreign to the character of Śiva, and an attempt has been made to trace the cult to non-Aryan sources; but it is more likely that the generative Śiva is but an embodiment of the sun-god. In any case, the antiquity of the cult is not to be challenged. One who would know more of the subject has but to read such a work as the late Max Mueller's *History of Ancient Sanskrit Literature*, or, by way of example (this being no more than to touch the bibliography), such a special treatise as Richard Smith's *Beiträge zur indischen Erotik* (Leipzig, 1902). Here, we are seemingly at the very fountainhead of the *Liebesleben*; and all this we find set forth in the great religious literature, the Vedic texts.

We might turn to other venerable races. The old Egyptian love-poetry, as Mueller again has shown us, has something to teach us.² In the minds of the ancient peoples, we come upon an association of the ideas of Love, Poetry and Creation,—all of them a *poesis*, or making. It is with the Greeks, however, that we encounter the early definitive statement; and the Greeks undoubtedly got much of it from the East. The student of comparative religions might have something to tell us concerning the relations of the Occidental erotic cosmogony to that of the Orient. In the West, as we shall see, the original principle was soon to become weakened and vitiated.

The Greek Orphic View

The early Greek concept of Eros, or Love, is inseparable from cosmogony. In the beginning, so ran the doctrine, was Chaos, that infinite formless mass (mentioned by Epicharmus, in Aristophanes' *Birds*, and by Plato in the *Symposium*), out of which the universe was created. A study of the various

senses in which the word *χάος* was employed is enlightening. In Hesiod's *Theogony*,³ it is represented as the primal state of cosmic existence. In Ibycus, on the other hand, as well as in two passages of Aristophanes,⁴ we find it definitely signifying *Space*, infinite space, or, more vaguely, the atmosphere. It even more frequently means a vast-yawning pit, a chasm,⁵ a mere metonymy for space. But *Time* likewise is a *chasma*; and so, we find the word interchangeably applied to Space or Time. In the end, it is darkness, the darkness of an infernal night.⁶ The gulf, the abyss, now appears as a *νεφέλη*, or cloud. With this "chasm" of Hellenic metonymy, it is interesting to compare the nebula of Laplace and his successors, and the modern Einsteinian conception.

Chronos, the Time-Spirit, came then and laid in Chaos the fertile and fertilizing egg;⁷ and it was from this egg that Eros sprang, Eros the winged, the ever-young, the radiant, the armed, Eros the irresistible of gods and men, Eros the Destroyer, Eros the unifier, the orderer, the harmonizer. For

³ *Theogony*, 120. For Epicharmus, see the Polman-Kruseman edition, p. 76; *The Birds*, 693; *The Symposium*, 178B. Cf. Ovid, *Metamorphoses*, I., 7, and Lactantius, I., 5.

⁴ Ibycus, 41 (Schneidewin edition); *The Birds*, 192; *The Clouds*, 627 (for Aristophanes, the Dindorf edition).

⁵ Cf. the *poeta physicus*, Oppian, *Cynegetica*, III., 414 (Schneider edition).

⁶ Re the interchangeable application, see the philosopher, M. Antonius (Gataker edition), IV., 3. For the dark chasm, see Quintus Smyrnaeus, II., 614. Cf., also, the *Metamorphoses*, X., 30, and the *Fasti*, IV., 600 ("inane" is the adjective here), and Seneca's *Medea*, 741 ("caecum"). This is the deity invoked ("Erebumque Chaosque") in the *Aeneid*, IV., 510. With the Latins, the transference to the sense of immeasurable darkness, a deep-environing and impenetrable obscurity, a "Cimmerian night" ("horridum" is the Christian poet, Prudentius Clemens' word; see his *Cathemerinon liber*, V., 3), is even more marked and complete; see Statius' *Silvae*, III., ii, 92.

⁷ This was one of the cosmogonies. Another made Zeus the son of Saturn, or Chronos, and of Rhea; Titan offspring of Chaos-born Earth and Heaven.

² *Die Liebespoesie der alten Ägypter*, Leipzig, 1899.

Time's bright-hued infant, creation's first-born, is a worker of destruction, too. As far back as the Vedic mythology, Śiva, who was to take on more and more the character of the Generator, the Begetter, and from whom the lingam worship was to stem, was adored as the destructive member of the triad: Brahma, who created, Vishnu who preserved, Śiva who was to destroy the universe. And Appuleius' Psyche, later, as she lets the drop of burning oil fall upon the face of the sleeping Cupid, is to become acquainted with one phase of this dread power. Yet, it is this same force, the same Eros, that brings the elements of Chaos into tuneful form.

Homeric Love.

Such in its purity was the Orphic doctrine. But it would seem that it did not, comparatively speaking, remain pure for long; although this is not to take into account the ages of religious evolution that went before Hesiod, that "gatherer of legends," as Herodotus calls him, whose name for us is still wrapped in the glamor of the pristine and the unspoiled. It may be that the purity of the legend had been impaired by the time a literary crystallization was given it. In any event, one thing is certain: already with Homer, the concept of Eros has become a pejorative one. The statement has been made by some that the god is absent from Homer. This is hardly exact. The word, ἔρος or ἔρω, occurs in a number of passages in the *Iliad* and the *Odyssey*, but invariably with reference to sexual passion, as a common rather than a proper noun, as: ἔρος φρένας ἀμφεκάλυψε, "love wrapt his senses" (*Iliad*, III., 442); or, ἔρω δ' ἄρα θυμὸν ἐθέλχθῃ, "by love's witchery were they ensnared" (*Odyssey*, XVIII., 212); while elsewhere the word is weakened to the sense of mere *desire* for something, as for food and drink (πείσιος καὶ ἐδῆτύος ἔρος), a weakening of signification which, as we shall see in a moment, is carried further by later writers.

Love, eros with a small e, is here the destroyer, the spreader of snares, something to be avoided, shaken off and spurned by the manly Achæan, the warrior, whose battle-strength is only sapped by the wiles of the female. Yet, love at times had a somewhat different aspect in Homeric civilization; we are not to forget the Theban "Sacred Band," or the before-the-battle sacrifices of the Cretans and the Spartans, as described by Athenæus. For Eros was also the god of masculine friendship. Homeric society on the whole is a rugged, virile, primitive one, inclined to reject sexual love, between man and woman, save for distinctly procreative purposes, as an enervating softness. The point is, the conception of love has narrowed, suffered a restriction of meaning; the word itself has entered upon the downward path of seemingly all words; the cosmogonic God has vanished, and the little gods, the pretty, posturing, simpering *Erotes*, and, not long after, the Latin *Cupidines* and *Amores* are soon to come mincing in to take his place, until the once mighty Destroyer, the Time-born out of Chaos, ends up as an arrow and a red-ink heart on a St. Valentine's Day postal card!

Meanwhile, the pages of Homer are chaste, if life was not. Homer conveys, indeed, the impression of being asexual, owing to his inability to conceive of love as anything other than a sexual bewitchment and enslavement. The modern romantic or post-romantic conception is as foreign to him as is the modern idea of law or any organized concept of morality. As for the "face that launched a thousand ships,"—that was it: it launched a thousand ships, kept any number of well-greaved Achæans at battle-toil for years, including the much tossed Odysseus, and led to the fall of spear-bearing Priam's race.

No, Helen'sauteous countenance brought naught but woe; the manly Achilles has other business in life. This is not to say that there is any religious

or moralistic asceticism in Homer; if there is asceticism there, it is that of all rude young peoples, and individuals; it is that of the athlete who, as someone has put it, triumphs not over his body but with it. As a warrior, the male has time for love only in his softer, weaker moments; but he did have such moments, if we are to credit the perverse Martial's humorously leering account, centuries later, of Hector and Andromache's relations:

*Masturbabantur Phrygii post ostia servi
Hectoreo quoties sederat uxor equo.*

In connection with the earlier larger concept, it may be said that what we have is the usual anthropomorphism to be encountered in the forming of religions, the attribution of the human to the deity, the cosmos, with eros coming before Eros. This may be true; the only thing we have to go by is language, man's ideational tool, which becomes the mold of his thought, and that literature which he builds out of life and language. So far as the lexicographer's knowledge goes, one of the very oldest instances of the employment of the word is in Hesiod (*Theogony*, 120), where *Eros* has distinctly the sense of the God; and Hesiod, the collector of traditions, must have been reporting one that dated from centuries and even ages before his time; whereas in Homer, the idealized, the if you will apotheosized Eros does not appear at all. One is to take account, of course, of the existence and persistence over a period of time, as with the Hindus, of an esoteric, metaphysical teaching, alongside the popular corruption, the vulgarization. However this may be, in the sixth-century Anacreontic fragments, we still find *Eros* occurring in the sense of the God of Love.⁸

⁸ Anacreon, 64; see the edition of the True Fragments by Bergk and that of the spurious *Anacreontica* by Fischer.—We are not to forget the distinction that was made between the Aphrodite Ouranios and the Aphrodite Pandemos. Cf. Socrates, in Xenophon's *Symposium*; see also Plato's *Symposium*.

Eros in the Fifth Century and After

It is in the fifth century B.C., in the texts of Aeschylus, Herodotus and Thucydides, that we come upon what is almost a new word, an *eros* that means *violent desire*, desire in general, desire *for a thing* (a meaning we have seen foreshadowed in Homer), ἔρως τινας;⁹ the vocable has been weakened in somewhat the same manner as has our word, passion—the schoolgirl with her "passion" for chocolates. Love, the short of it is, has become Lust; and Lust is not single of eye. In the course of the same century, Euripides coined his plural, *Erotes*, his example was followed by Simonides, and the door was open for Ovid's troop of little naked loves (the "*corpora nudorum amorum*"), and for the *parvi Amores* of Propertius.¹⁰ Eros, soon to become the Roman Cupid, is now the sweetly sickish, prankish, tormenting boy, tormenting gods and men alike, who is to exist with no remarkable metamorphosis from the Alexandrians and the Latin Elegists down through Shakespeare to the eighteenth century and later. Following that enervating enchantment against which the souls of Homeric heroes wrestled, Eros the Unifier has been pluralized into a cluster of waggish elves.

It is to be noted that this change in the conception of love is synchronous with one in the character of Greek plastic art. Greek sculpture down to the fifth century B.C. is uniformly non-representational in all its varieties, the Mycenaean, Cretan, Achæan or Ho-

⁹ See the *Eumenides*, 865. Cf. Herodotus, ἔχω ἔρωτά τινος (V., 32), also the ἔπος ἔχειμε in the *Suppliants* (521) of Aeschylus. Cf. the *Agamemnon*, 341, and Thucydides, VI., 24. Cf. the Latin *cupidus*, *cupido* (our *cupidity*); this sense will be found in Ennius (see the rendering of the Euripidean ἱμερος μ' ὑπῆλθε in Cicero's *Tusculan Disputations*, III., 26, and in Plautus' *Trinummus*, III., ii, 50, and elsewhere).

¹⁰ *Metamorphoses*, X., 516. (The singular, *Cupido*, as the name of the god of love will be found in Cicero's *De natura deorum*, III., 23.) Propertius, III., i, 11, and elsewhere.

meric, as are the Dipylon vases of the "Dark Age" or "Archaic Era" (the vase-paintings), etc. It is with the Age of Pericles that Greek art becomes photographically realistic, a realism which is to be given a philosophic formulation in Plato's theory of *Mimesis*, and which is finally to be typified by those grapes of the painter Apelles, which were so life-like that the birds came to peck at them. Pre-Periclean Greek art bears much the same relation to the Periclean and post-Periclean varieties that Byzantine painting does to the medieval. It is primarily architectural-functional, in the form of the bas-relief, and in feeling, too, and original conception it has a cosmic-interpretative character, just as has the painting of the Middle Ages.

In other words, as civilization approaches a peak of intellectual brilliancy, whether in the Periclean epoch or in the Renaissance, there occurs a certain *reduction*, in art and thought, to the rational human scale, which may be looked upon as an advance or a mark of growing decadence, as one's view is mystical or non-mystical. It may merely be pointed out here, in connection with the Greek Eros, that there occurred:

1) a reduction of significance, from the cosmic to the human plane, indicated by a decided *weakening* of the word, to the *πάσις καὶ ἑδρεύς ἐρως* of Homer and the *ἔρως τινος* of Aeschylus;

2) a *division* and pluralization of the erotic motive (the Euripidean *Erotes*),¹¹ which, as will be seen, was to lead to that widespread sexual *satiety*, *depletion* and *impotence* which Christianity found when it came upon the scene.

If the evolution of the Greek Eros has been traced in some detail, it is for the reason that, with Periclean civilization setting the cultural norm which Western Europe of the Renaissance and after was to follow, the Hellenic conception of Love, filtered through the Roman, and combatted by the Christian

ascetic impulse, was to exert a powerfully determining influence upon literature down to modern times.

The Greek Love-Literature

With the Greeks, we do not come upon many of those distinctive "love-books" that constitute the modern collector's delight. About the only work that qualifies for this category is Lucian's *Dialogues of Courtezans* (which were to provide the model for the sixteenth-century Aretino's *Ragionamenti*). It is with the *Dialogues*, indeed, the Sapphic fragments, and certain of the epigrams from the *Anthology*,¹² perhaps,—it is with these works and those of the Latin Elegiac poets, in particular the love-books of Ovid, that it is customary to begin the occidental bibliography of that species of literature which classes as *Erotica*. There would be a good many more items in the Greek, if it were not that so many works have been lost, while others have come down to us only in fragments which remain buried in learned collections.

The *Comic Fragments*, e.g., are a small mine of erotic information and sidelights. In the Greek comic authors, extant in whole or in part, in Aristophanes, Menander, Antiphanes, Anaxilas, Diocles, Eubulus, Xenarchus, Philemon, Alexis, Timocles, Eunicus, Aristgoras, etc., will be found satires of the courtezans and hetairai, their mode of life and their vices, while occasionally, as in the case of Menander or Eunicus, we will

¹² There were a number of Greek Anthologists, the first being Meleager of Gadara, about 100 B.C.; Meleager was followed by Philippos of Thessalonica, by Agathias, and others; there are also the collections of Constantinus Cephalas (known as the Vatican, or the Palatine), and of Maximus Planudes. There have been numerous translations from the Anthology (so called) into English, and English poets have drawn freely upon it for material and inspiration. The influence of the Anthology is particularly evident in the work of such modern poets as H. D. and Richard Aldington.

¹¹ See the hard things that Nietzsche has to say of Euripides, in his *Birth of Tragedy*.

find the playwrights dedicating works to their courtesan mistresses.¹³

The Greek anecdotal literature revolving about the courtesan is a rich one. To Callistratus is attributed a *History of Courtezans*, to Gorgias the Sophist a work on the Courtezans of Athens, to Apollodorus a treatise on a similar subject, and to the comic authors, Macho and Lynceus, collections of their witty sayings. Among the *scriptores erotici*, or definitely erotic writers, Aristaenetus and Alciphron contributed, among other writings, collections of Letters. Much incidental enlightenment is to be had from such works as the *Deipnosophistai*¹⁴ of Athenaeus and from other writers. As far back as the seventh century B.C., we meet with an ardent erotic poet in Alcman, the gigantic eater of antiquity and lover of the "philosophic" hetaira, Megalostrate of Sparta. How much of this type of literature has been lost, it would be impossible to say.¹⁵

Sappho and the Pangs of Love; Beginnings of the Romantic Impulse

On the nature of Sappho's sexual passion, which Horace has characterized as "*mascula*,"¹⁶ it is not necessary to expatiate here. The point to be stressed, rather, is the intensity of her passion, as revealed in the famous Sapphic Ode, its hopelessness, symbolized by her tragic death. This is something other than an eros that is nothing more than

¹³ For the comic authors on the courtesan, see: the *Neottis* and the *Monotropos* of Anaxilas; the *Thalatta* of Diocles; the *Clepsydra*, the *Parnychis* and the *Cercope* of Eubulus; the *Thais* of Menander; the *Adelphoi* of Philemon; the *Isostasion* of Alexis; the *Ikarion* of Timocles; the *Anthea* of Eunicius; the *Mammakynthos* of Aristagoras; the *Pentathle* of Xenarchus; etc., etc.

¹⁴ Literally, "Dinner-Sages," the title of a work by Athenaeus which was a sort of gourmet's almanac. Athenaeus is a vivid source-book for the manners of Grecian antiquity.

¹⁵ Much of it was lost through the early Christian censorship. For the Greek erotics, see R. Hercher's *Erotici scriptores Graeci*, 1858-59.

¹⁶ There was even a widespread belief that Sappho was a hermaphrodite.

lust. It is an encounter with Eros the Destroyer, an anticipation of Psyche's infernal descent, in Appuleius' legend.

This discovery of the suffering that lies in love is one that is to be again forcefully embodied in literature, but from a different point of view (that of rebellion, in place of acceptance), some twenty-four-hundred years later, by the eighteenth-century Madame de La Fayette, author of *La Princesse de Clèves*; although there were other women writers along the way—Christine de Pisan in the fifteenth century is one—who had had much the same experience. As for that aspect of the Sapphic libido which distinguishes it from what is known as normal love, it has had a spokesman in our day.¹⁷

The Greek attitude toward the sexual relation was a prevailingly non-romantic one. There was, certainly, none of that pre-marriage romanticism which reached a high point the century past; and any display of ardor between husband and wife would have been looked upon as unbecoming, would have been to put the wife, a respectable matron, into the same class as the courtesan, the concubine or the hetaira. It was to the courtesan or the concubine¹⁸ that the husband turned for sensual pleasure, to the hetaira for the same thing plus a certain companionship, the intellectual quality of which has been perhaps, at times, exaggerated.

In war, on long military campaigns, the general would turn to his boys, as John Addington Symonds has pointed out, in his *A Problem in Greek Ethics*; and this relation would seem to have possessed a more ardent character than did the conjugal one, the element of companionship, as with the hetaira, entering into it. The case of Socrates and Alcibiades is, of course, long since famous.

¹⁷ Radclyffe Hall, author of *The Well of Loneliness* (1928).

¹⁸ The writers are strangely silent, on the whole, as to the place which the concubine occupied in Greek life; but there is no doubt that concubinage was an institution with the Greeks.

It is not exact, however, to make the statement, which has been made, that the romantic conception is wholly alien to the classic Greek mind. Sappho and certain of the other pieces in the *Anthology* are there to contradict such an assertion; and modern scholarship has shown that, in the later Hellenistic period, there was even the beginning of a romantic form closely resembling the modern novel, as in Longus' romance of *Daphnis and Chloe* or the *Aethiopica* of Heliodorus.

Love among the Latins

The Latin love-literature goes back to ante-classical times, to such works as the *Erotopaegnon* of Laevius and the Fescinnine verses of the historian, Ennius, compositions of which we are told by other writers. The Roman playwrights, Plautus and Terence, like the Greek comic authors, contribute their share to the picture that we are able to form of the sexual manners of the Romans in the second century B.C. For the Augustan Age and later, in addition to the more distinctive love-poets such as Catullus, Tibullus, Propertius, and Ovid, and Horace, who is in large part a love-poet also, there is much to be had from the satirists, Juvenal and Persius, from the epigrammatist, Martial, from a historian such as Suetonius, author of the *Lives of the Caesars*, and even from a moralist like Seneca and so comparatively chaste a writer as Virgil, who in the eighth book of his *Aeneid* gives a vivid description of the loves of Venus and Vulcan, while in his *Georgics* he upon occasion depicts a sylvan satyr-like passion. The grave Pliny amused himself by writing lascivious verses; and he it was who launched the apology which Martial was to voice: "*lasciva est nobis pagina, vita proba.*" Similarly, Appuleius, a sage in life and teaching, becomes a profligate in his epigrams and his letters. The Venus Libentia (or Lubentia), the "willing" Goddess of Delight, never lacked her

worshippers at Rome. And finally, there is Petronius Arbiter, to condense for us in his sombre *Cena Trimalchionis* the picture of love under the Emperors.

Much of the Latin as well as the Greek erotic literature suffered at the hands of the early Christian censors and expurgators. Many works have entirely perished, while others, such as the poems of Catullus and the writings of Petronius, have undoubtedly been tampered with or mutilated.¹⁹

Horace and the "Cupido Sordidus"

If the works of Horace, and especially the *Epodes*, have not commonly been regarded as falling within the domain of erotic literature, at least not to the point of becoming one of the "love-books," this has been due in large part to professorial prudery, plus the ordinary classroom devitalization of texts,—the omission of the *Epodes* in certain editions and translations; such a commentary as: "The coarseness of this epode leads to omission of any outline of its contents"; etc. In brief, the student conceivably may plod through Horace without realizing that his author was one of the outstanding rakes of history, by way of being a Casanova of his day, although he failed to carry it off so jauntily as did the latter—he let his rake's suffering and his fre-

¹⁹ Lacroix, in his *History of Prostitution* (Part I., Chapter XIX.), lists a number of Greek and Roman erotics, now no more than names, whose works perished in this way; he mentions: Proculus, imitator of Callimachus; Hortensius; Servius Sulpitius; Sisenna, translator of the *Milesii libri* of Aristides; Memonius; Ticidea; Sabellus, imitator of the Greek poetess, Elephantis; Cornificius; Eubius; Anser; Porcius; Aedituus; Sotades, who gave his name to a special variety of erotic poetry, the "sotadic," portraying unnatural love; Mimnermus of Smyrna; Hemiteon of Sybaris, author of a poem entitled *Sybaritis*; Nico; Musaeus; etc. These authors and their works are only known through references in other writers. Our curiosity is frequently stimulated, as when we hear Lucian speaking of the "obscene colloquies of the old philosophers."

quently mean and petty resentments show.²⁰

Horace's poems go to form an amorous biography, in which the chronology has probably been deliberately mixed. The whole is a procession of the poet's light-o'-loves: Neaera, Lydia, Chloe, Barine, Phyllis, Glycera, Lyce, Cinara, Inachia, and all the rest, including, for variation, a male love or two, a Lysiscus or another. For Horace was a follower of the "*Cupido sordidus*," of the "*parvi*" or "*lascivi Amores*,"²¹ descendants lineal of the Greek Erotes. He assures us quite frankly that his preference is for "easy and convenient" amours and for courtezans, and in the *Epodes*, he acquaints us with his fondness for boys and young girls, going into ecstasies over the former which sound like a first draft of certain passages in Oscar Wilde's *The Portrait of Dorian Grey*.

All this means that the poems are highly allusive, and are hardly to be understood without biographical notes, which are commonly not supplied. The "Lady of the Elephants," for instance, the "*mulier nigris dignissima barris*," must be known to refer to an elderly and repulsive female flame of Horace's, who had tried to come between the poet and a fresh amour in the person of a beautiful young courtesan, if all the venom of the verses is to be appreciated. The same is true of other poems, e.g., the "*Matre pulchrâ filia pulchrior*."

For Horace packed into his creations all his emotional-amorous reactions, his sensual longings, his jealousy, his seductive wiles, and, above all, his spite, as in the case of Canidia (masking a real-life Gratidia), the aged courtesan-sorceress. He had the petty, peevish disposition and the feline cruelty of the

roué, a temperament that grew exacerbated with age; he seems half-consciously to have been in quest of some sort of constancy among a class of women whose profession was fickleness, and the result was jarring to his nerves; he had not, to repeat, the surfacely nonchalant bearing of a Casanova, and the impression he gives is that of an almost feminine cattishness.

As a consequence of his philanderings, "*penis putissimus*" though he may have been (the nickname conferred by the Emperor Augustus), he finds himself upon occasion "*pene soluto*," as in the presence of the Lady of the Elephants, who accordingly has to resort to other means of stimulation ("*ore ad laborandum est tibi*"). We come here upon that note of impotence which is a dominant one in the later Latin love-literature, as we are to see in the case of other poets.

Catullus and His "Lascivious Page"

A thing that strikes us at once in connection with the Poems of Catullus is the language that is employed. This is the language of the street and the brothel, of the courtesan herself, the obscenities mingling in an at times disconcerting manner with the poetic beauties, in those of the *Carmina* which have come down to us—it has been estimated that at least half of Catullus' poetic output has perished, thanks to the early Christian censorship, which has been spoken of. For the character of his language, the poet proffered Martial's apology; he declared that the poet himself must be pure, but for all of that, his own life was obviously far from chaste. In his poetic work, however, he exhibits a concentration of passion—for the famous Lesbia, of the "Sparrow"—that contrasts with Horace's many loves; the name of only one other real amour is to be met with in his verses.

As for his Lesbia, said to have been the daughter of a Roman senator, there has been much discussion as to the character of her libido, and, partly be-

²⁰ If Laeroix, in his jumbled and often scholarly inaccurate history, has done nothing else, he has made the lives of Horace and the other Roman love-poets come alive. *Op. cit.*, Part I., Chapters XXIV ff. [*The History of Prostitution* (1851-52), by Paul Laeroix (Pierre Dufour), translated from the original French by Samuel Putnam, 1926, 3 vols.; revised edition, 2 vols., 1931.]

²¹ *Odes*, II., xvi, 15, and II., xi, 7.

cause Catullus addressed to her an imitation of the Sapphic Ode, she has been made out to have merited her name, while the "Sparrow" has been seen as a young girl companion and lover of Lesbia. Such the "*passer deliciae meae puellae*."

Catullus appears to have loved Lesbia passionately all his life; but this did not prevent his frequenting courtezans, and we hear him addressing a violent reproach to a "stinking strumpet" (*pudida moecha*) who has stolen his manuscripts. His sexual life was an excessive one, and he boasts of "renewing nine times my amorous exploits" in a single night, which reminds us of a similar bit of bragging on Ovid's part. The result was, he was a decrepit old man at thirty-four, and died at the age of thirty-six. Poetically, he carries on the theme of promiscuity and of depletion; it is, indeed, an anthology of impotence which is to be found all the way from Horace to Martial and Petronius.

Catullus' work, as has been stated, is linguistically significant; and it stands out for its high poetic qualities. A number of English translations of his Poems have been made, but none of them has succeeded in capturing the subtle and elusive rhythm and shading of the original.²²

Tibullus and Propertius

Tibullus and Propertius likewise carry on the motive of impotence. The former, one of the "triumvirs of love," as an old rhetorician calls him, began under the literary influence of Catullus. His flame was Cynthia, and there seems to have been something of a literary element in their relationship, although, when conflicting reports are simmered down, she appears to have been merely a courtesan, in this era of poets and courtezans. He, too, died at an early age, that of forty, after having buried his mistress; and there is a

Poesque touch to the end of their romance. As for Tibullus, he began life by ruining his constitution in sexual orgies. He hymns his Delia, and he also had affairs with Neaera and Glycera, courtesan friends of Horace, traces of which are to be found in his poems.

Ovid, "Legislator of Love"

"The preceptor and legislator of the art of love" is the term which has been applied to Ovid. The "love-books of Ovid," the *Ars amatoria*, the *Amores*, the *Remedia Amoris*, are a distinct item in the erotic bibliography, and have been exquisitely illustrated by Jean de Bosschère.²³ Aesthetically, poetically, Ovid's place is a high one. This is due in part to his intense and unsparing self-criticism, which led him to burn a number of his books and to attempt, in exile and at the end of his career, to destroy them all. Sexually, he conveys the impression of being a little more robust than Tibullus or Propertius; but we are not to forget his experience with his beloved Corinna, when, Ovid being unequal to the occasion, she accuses him of having come to her "tired out with love," and he explains that "*me memini numeros sustinuisse novem*"; the lady thereupon turns to her captain, the poet's rival, back from the Asiatic wars.

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the mythologic loves of gods and goddesses, becomes Ovid's major interest in life, and to it he brings all the gifts of his genius, his fine imagination and his superb craftsmanship. His acquaintance with the secrets and mysteries of

²³ *The Love Books of Ovid*, 1925. Among Bosschère's other illustrated volumes may be noted: *The Plays of Aristophanes*, 1928; *The Golden Ass of Lucius Apuleius*, 1923, with which, cf. *L'Âne d'Or d'Apulée*, Paris, aux trois Magots, 1928; *The Decameron*, 1930 (Richard Aldington translation); *The Works of François Rabelais* (Samuel Putnam, American language translation), 1929; *Ten Droll Tales*, first decade, 1926; *Ten Droll Tales*, second decade, 1930; for bibliography, see *The World of Jean de Bosschère*, by Samuel Putnam, 1931, pp. 158-59.

²² A translation of the *Carmina*, by the young American poet, Horace Gregory, was published in 1930.

love and of the feminine boudoir is thorough-going and minute, and he is capable of penning an exhaustive treatise on cosmetics, or on the remedies for a broken heart. He remains one of the great love-poets of all time.

Martial, Painter of Imperial Manners

Following a seeming half-century lull in erotic production comes Martial with his *Epigrams*, probably the most licentious body of verse of literary quality that there is. What Martial really affords us, as some one has remarked, is a picture of prostitution and depravity under some seven Roman emperors. In his obscenity, he started out, it is likely, by imitating Catullus, but he improved upon the latter in this point. When attacked for the "freedom" of his writing, his reply was that "a poem could not please without a *mentula*." In this, he was doubtless catering to the tastes of the Imperial court. In self-defense, however, he gave poetic form to the "*lasciva pagina . . . vita proba*" apology, the substance of which we have already seen Pliny and Catullus making use of.

The truth is, Martial led a libertine's life, and even carried his libertinism into his home, as witness the insulting poems he addresses to his wife, upbraiding the latter for her moralistic interference with his pleasures, and for not being willing to satisfy his desires, as in the lines:

*Paedicare negas; dabat hoc Cornelia Graccho,
Julia Pompeio, Porcia, Brute, tibi!
Dulcia dardanio nondum miscente ministro
Pocula, Juno fuit pro Ganymede Jovi.*

And when his wife comes upon him in a flagrant act with one of his own sex, and offers herself to satisfy his whim, he is more insulting still:

*Parace tuis igitur dare mascula nomina rebus;
Teque puta cunnos, uxor, habere duos.*

This will give the flavor of Martial at his baldest.

The prime quality of Martial's work is its power in depicting the manners

of first-century Rome; it fulfills a function corresponding to that of the modern *roman de mœurs*. The types of the day are inimitably caught and set down, with a broad streak of caricature, and as recreated by Martial, significantly tend to pass into proverbs. The courtezans among others are victims of the poet's caustic pen; and like Horace and other of his predecessors, Martial at times takes out an amorous spite, for he admits that he has committed numerous "phallic solecisms" ("*saepe solecismum mentula nostra fecit*").

The final glimpse that we have of Martial is as a reformed and repentant rake; he has been saved by his wife! and brought back to provincial Spain, to lead henceforth a rural, domestic—and moralizing—existence, he who years before had declared that there was "nothing more contemptible than Priapus become a priest of Cybele."

Martial's works, during the author's lifetime, were extremely popular, being much sought after by what to-day would be termed "curious collectors." They were to be found in all well-stocked libraries of the worldly, and in "handy" format, might be carried to the bath or anywhere. The poet had no illusions as to the character of his audience, informing us that he is read by "the young, women of easy manners, and the old man who pesters his mistress." Prominent among his readers were the debauchees of the Imperial court and the fashionable courtezans of the day. Had his verses not possessed solid literary merit, they might have perished as have the works of so many other erotic writers, many of whom are no longer so much as a name.

The Erotica Trade in Ancient Rome

Martial was far from being the only writer who was popular for his lubricity. The works of Catullus were a close rival in this respect; and there were other authors, mere names now, such as Pedeo, Marsus, Getullicus. There was one bookseller, a freedman by the name of Secundus, who kept a shop in

back of the *Templum Pacis*, who specialized in this trade. He was heavily patronized by courtiers and courtezans alike, and by many a respectable matron as well; for matrons then as now sometimes indulged such a taste as this, in under-cover fashion. Martial even takes a jibe at them for their hypocrisy, in pretending to prefer a painfully chaste and innocuous writer like *Cosconius*. The courtezans likewise occasionally put on airs, and pretended to prefer the works of *Tibullus*, *Propertius* and *Ovid*, as being superior literary productions. But whatever happened, Martial was assured of a sale; and the same was true of the other writers mentioned; the systematic trade in erotica had long since begun.

Petronius, or Love under Nero

Although *Petronius Arbiter* died in 67 A.D., and Martial not until 101 A.D., it seems more logical to treat the author of the *Cena Trimalchionis* last, as marking the climax if not the end of the Roman erotic literature. The Arbiter of Refinements was noted for his cleverness and literary skill as well as for his taste in decadence. While he pictures all the vices of his age, it is never to thunder against them like a *Juvenal*; in this sense of the word, he is not a satirist; his motto is, "blush at nothing" ("*nec pudeat quidquam*"); he is easy on the courtezans, as the poets were not, and about his worst reproach is for a bit of over-rouging now and then, or something of the sort; such a work as the *Satyricon* can hardly be said to have been composed for the correction of those Neronian manners which it pictures, but rather runs the risk which the *roman de mœurs* always does, that of encouraging the vices set forth.

If anything would tend to forestall such an effect, it would be the sadness and sombreness in which so relentless a portrayal is inevitably suffused; vice and excesses lose much of their attractiveness when so cruelly unveiled. *Petronius* was a great realist, and his work, which has a relation to the modern

novel, deserved to survive. Only a small part of it, however, less than a tenth it has been said, has come down to us—the Christian censorship once again; it is likely that, owing to that censorship, the most obscene portions have perished. "Baths, wine and love" were all there was in life for the chronicler of debauchery who, with Nero's wrath upon him, ended by opening his own veins. They were physically ruinous ("*corrumpant corpora sana*"), but they were all there was, and so he lived for them to the end, and set them down in exquisite prose.

It may be said once more, that what we have all the way, from *Horace's penis solutus* ("*si quid in Flacco viri est*") to Martial's "solecisms" and the dinner of *Trimalchio* is a record of amorous exhaustion,—erotic impotence as a widespread social phenomenon breaking into literature. Such was the world with which an escetic Christianity came to cope.

The coming of Christianity is commonly taken as marking the meeting and the clash of two powerful life-views, the Hellenic and the Hebraic, the one standing for a pagan "sensualism," the other for "spirituality." But as a matter of fact, the New Testament view, with regard to sex, as in other points, is far from being identical with the old Hebraic one, representing rather a modification of Hebraism by contact with the Hellenistic world. Accordingly, before considering the conflict of the new asceticism with that erotic promiscuity and excess into which the Greco-Roman civilization had lapsed, it may be well to have a look at the Old Testament conception of love.

A Backward Glance at the Hebrew Love Literature.

Numerous love passages might be selected from the Old Testament, and from the various books one might extract, as *Lacroix* does, a picture of prostitution among the ancient Hebrews.²⁴

²⁴ See, especially, *Proverbs*, Chapters V. and VII.

From Moses and his dusky mistress down through Solomon and his *Song*, the element of sensuality is strongly pronounced among the Jews. This sometimes finds a gentle lyric-pastoral expression, as in that charming idyl, the *Book of Ruth*, but it is in the *Song of Songs*, inspired by the passion of Solomon and the Shulamite, that Hebrew sensualism attains a gorgeous peak of amorous-poetic rapture.

The *Song*, of course, is one of the great love-books of the world, in spite of the attempts of theological commentators to make it out to be a metaphorical description of Christ's love for his Church, than which, nothing could be much more stupid, in view of the obviousness of the personal, sexual theme. In the original, the *Song* is in the form of a dialogue or drama. One of the striking things about it is the manner in which it retains its shimmering loveliness in almost any language into which it is rendered, each tongue appearing to lend it fresh beauties of its own; it would almost seem that it is impossible to spoil it in translation, which commonly takes away so much.²⁵ The *Song of Songs* has given rise to a small literature, and its love story has been retold in many forms.²⁶ It has also inspired many interpretations in plastic art.

The point to be made here is that the view of sensual love to be encountered in Solomon's *Song* stands in violent contrast to that promulgated by Pauline Christianity. The latter view is by way of being a reaction to the decadent sensuality of Paganism, and as such, exhibits that intensity which an effective reaction to so powerful a stimulating cause might be expected to display. It is only in this light that the new con-

ception of love which came to combat the old, a conflict destined to be reflected in literature, is to be understood.

The Pauline View of Love: "Marry or Burn"

With the preaching of St. Paul, a sudden fury against the flesh bursts upon the gentiles of the Roman Empire. The Romans, toying with their little nude Cupids, are found to be given over to "ignominious passions":

They have changed the glory of the incorruptible God into an image made like to corruptible man, and to birds, and four-footed beasts, and creeping things. Wherefore God also gave them up to uncleanness through the lusts of their own hearts, to dishonor their own bodies between themselves. . . .

Ye have yielded your members to iniquity; even so now yield your members, servants to righteousness unto holiness. . . .

For this is the will of God, even your sanctification, that ye should abstain from fornication, and that every one of you should possess his vessel in sanctification and honor, not in the lust of concupiscence, even as the Gentiles which know not God, for God hath not called us unto uncleanness but unto holiness. . . .

So thunders the flaming Apostle. "The works of the flesh are fornication"—"that ye should abstain from fornication"—such is the burden of the apostolic message to Thessalonians, Ephesians, Corinthians, Galatians, Colossians: "Mortify, therefore, your members which are upon the earth; fornication, inordinate affection, concupiscence." For: "he that soweth to the flesh shall of the flesh reap corruption, but he that soweth to the spirit shall of the spirit reap life everlasting." And the core of the teaching is:

Because the carnal mind is enmity against God; for it is not subject to the law of God, neither indeed can be. So then they that are in the flesh cannot please God.

The only way out, aside from fasting, prayer, meditation and penance, roads to the new Christian heaven of chastity, was the equally novel institution of Christian marriage; for "It is better to marry than to burn" (*quod si non se continent, nubent*, as the Vulgate has it). This, it may be pointed out, is the

²⁵ The *Song* is possessed of a sensuous verbal magic somewhat like that of Dante's verse; but where with Dante, it seems impossible to carry over the sensuous effect, the miracle appears to work itself in the case of Solomon's creation. St. Jerome's Latin of the Vulgate is one of the most effective versions.

²⁶ Among these may be mentioned, *Sulamith, a Prose Poem of Antiquity*, by Alexandre Kuprin, translated from the Russian by R. Guilbert Guerny, 1923.

view of love and of marriage which was to come down, through the Church on her ascetically functioning side, and through an essentially Pauline Protestantism, to constitute the outlook of Somerset Maugham's South Sea missionary in *Rain* and that of the modern "Holy-Roller" (cf. the stress on "holiness") and his kind, with marriage reduced to a legalized relationship for the propagation of the species.

All this is a good deal more readily comprehended, as a revulsion against promiscuity and depletion, if the last book we have laid down before taking up our St. Paul happens to have been, say, one of the later Roman love-poets. For Paul, while "a Hebrew of Hebrews," a Pharisee steeped in legal Judaism, was, it is not to be forgotten, as the son of a Roman citizen of Tarsus, in direct contact with Hellenic culture and, at the same time, with the feeling and ideology of imperial Rome. And yet, there can be no doubt, his teaching, his fulminations, came with a sense of abruptness, of shock. They were in contrast, for one thing, with the more tolerant attitude of philosophers who had gone before; they were even, to tell the truth, in some contrast to St. John's "That which is born of the flesh is flesh; that which is born of the spirit, spirit." The Pauline ideas and ideals, however, were the ones that were to prevail with the Fathers of the Church and with the Councils. "Hating," St. Jude puts it, "even the garment spotted by the flesh."

In seeking the source of this brusque and furious revolt against the flesh, we may trace certain elements back to pre-Christian Judaism, as far back as Solomon, and farther, to a certain Puritanism in the Hebraic character, a stress on the sanctity of family life and the purity of the home, an inclination to the dogma, if not always to the practice, of monogamy,—in any case, a highly developed sense of the family.²⁷ Paul

is a legalistically minded Jew, looking out over the Greek and Roman world in which he lived; and bent upon building up a Church which should be, in a way, another Roman empire, he is indefatigably laying the foundation stones of the edifice of Christian chastity and medieval monasticism. The old world was to last for some time yet; but the seed had been planted, and it held the germ of growth and of dogmatic victory.

The seed was not wholly novel, not wholly Pauline, but had dropped from an ancient bough. Sacred chastity had existed alongside sacred prostitution from very early times. There was the contemporary, or practically contemporary, "*casta placent superis*" of the anything but chaste Tibullus: "Away from the altar he who has spent the night with Venus!" There were the Vestals; but their virginity, Lacroix assures us, "did not extend below the girdle," and there are churchly Fathers and apologists—St. Ambrose in his *De Virginitate*, Minucius Felix, and others—who have considerable to say to the same effect; although we must keep in mind that they are naturally not exempt from *parti pris* in their eagerness to establish the originality, as well as the superiority, of the apostolic institution.

The classic spirit was by no means one-sided; there had been an Artemis and a Pallas, as well as an Aphrodite; There had been an Aphrodite Ouranios as well as an Aphrodite Pandemos; there had been fastings, too, and prayer and penance in the older rites. Christian virginity, monasticism, asceticism was but a counter-stress and over-stress, following upon the abuse and degeneration, the degradation of the Erotic Principle.

The Christian Eros

But Love, even though no longer embodied in the rites of Eros and Aphrodite, *op. cit.*, Part I, Chapter III.; see also the present writer's paper on "The Psychopathology of Prostitution," in the symposium, *Woman's Coming of Age*, edited by S. D. Schmalhausen and V. F. Calverton, 1931.

²⁷ This inclined the Jew to favor a prostitution restricted to "foreign women," a term which came to be synonymous with prostitute.

rodite, even though shrouded now in Christian veils and masked as Divine Love, was not so easily to be routed from the scheme of things; and beside that new enmity of the flesh which Christianity fulgurantly inculcated, there grew up, as taught by the same fiery Apostle, a doctrine of love, a doctrine that we find set forth in that ecstasitic hymn, the thirteenth chapter of the *First Epistle to the Corinthians*. "And now abideth faith, hope, love, these three; but the greatest of these is love."

The word in the King James Version is "charity," but the sense is "brotherly love." The Greek noun is ἀγάπη, which is not out of classical Greek, but distinctly Hellenistic, of the New Testament. True, it comes from a verb, ἀγαπᾶω, which dates as far back as Homer;²⁸ but it is interesting to note the heightened intensity which has been conferred upon the root. The meaning of ἀγαπᾶω varies between a welcome, or entertainment, extended to guests and a mild form of pleasure or contentment in general.

Ἀγάπη, on the other hand, is that love which moves heaven and earth, the love of the Father and of the Only Begotten for the world, and that Pauline death to the world and "dissolving in the Christ" which is manifested in a love for all. This divine love is beheld—we see it clearly in the passage quoted above—as the ultimate all-embracing meaning and justification of life. Beside it, all else is as naught,—the gift of tongues, the gift of prophecy, the understanding of mysteries, intellectual attainments, even faith the mountain-moving, or that semblance of charity (love) which bestows all its goods upon the poor and gives its body to be burned.

²⁸ Homer prefers the form, ἀγαπάω. Ἀγάπη occurs in the *Odyssey*, XXIII., 214; cf. *Iliad*, XXI., 289. Plato, Pindar and others employ the verb in the weak sense. The noun, ἀγάπη, is to be found, of course, in the Evangelists (cf. *Matthew*, XXIV., 12) and elsewhere in the New Testament. It is used in the plural, of the love-feasts of the early Christians, as in *Jude*, 12.

This doctrine can hardly be said to have been original with Paul. There are St. John and his mystic logos, representing an even more universal, more cosmic, more apocalyptic view. It was, none the less, Paul who radiantly clothed the doctrine for the Gentiles, for that Greco-Roman world which had lost the Hesiodic theogonic Eros.

Had Eros, then, returned in the garb of this lowly and despised cult, coming, not out of Hellas, but out of Judea and a manger, a cult founded by a Nazarene carpenter's son, who died by being crucified between two thieves? In a manner, yes. The stress had been shifted back to the cosmic. The seemingly novel Christian teaching was in a manner a reaffirmation of Eros the creator, and on the other hand, was a revolt against all the fleshly manifestations of Eros.

Eros is pertinacious, and the perduring erotic elements in Christianity scarcely need to be dwelt upon,—the mystic marriage with God's son, for example, of which the institution of early-Christian virginity, later to become monasticism, is the symbol and sacrament; the cult of the Sacred Heart today; the fairly continuous refflorescence down the centuries of religious-erotic poetry;²⁹ the phenomenon of a Spanish St. Theresa or a St. John of the Cross, etc.

This brings us back to that relation between the religious and erotic sentiments of which the anthropologist and the modern psychologist will tell us, which has become all but a platitude by now, and which is visible in the early ages of the Church in that incubus which lay upon the Fathers and theologians, Augustine, Tertullian, Origen, almost all of them: in Augustine's *Confessions*, which have become the classic type, not to be omitted in any exhaustive treatment of sex in literature; in Ter-

²⁹ One is not to be taken in, here, by the false article, such as the book of *buen amor* of the thirteenth-century Spanish arch-priest, Juan Ruiz, where, following a sort of Casanova's guidebook to the weaker sex, we encounter a hypocritical repentance in favor of divine love.

tullian's diatribes against women; and finally, in Origen's strong temptation to exclude women from the heaven he conceived.³⁰

Woman in the Early Church

The status of the early-Church woman is significant. In accordance with the Pauline theology, woman is now the child-bearing vassal and vessel of the Lord, and is to remain covered in the house of worship, out of deference to her earthly and symbolic lord, who is man. Eros has had his revenge. But meanwhile, as the new spirit permeates the pagan world, finding a certain expression in the pages of the non-Christian philosophers, from Seneca to Appuleius, just as it had had a certain foreshadowing in the philosophy of the Stoics, man begins to discover that Eros, Love, has a relation to his new-found soul, or *psyche*.³¹

Appuleius and the Legend of Psyche

It is with the second-century Appuleius that the legend of Cupid and Psyche finally crystallizes; for the legend itself had existed before; some traces of it are to be met with in most mythologies. It is, however, amid the ornate, tangy, African-flavored Latinity of the *Metamorphoses* (the "Golden Ass"), and coming from the mouth of a hag, that we first have its full allegoric and Platonic import, which is Appuleius' contribution; for the author, a rhetorician, was a follower of Plato. It is particularly significant, therefore,

³⁰ Cf. the story of Origen's self-castration. His views are the subject of much dispute, due to textual tamperings, but there is little doubt as to their general tendency on the subject here under consideration.

³¹ The Greek words, *ψυχή* and *πνεῦμα* are to be compared. The sense, in either case, is *animating breath*, or, literally, *spirit*. The former word, for example, in Homer (as in the *Odyssey*, XI., 207), is employed in the sense of a departed soul or ghost. We have, also, the *anima mundi* of the philosophers, as in Plato's *Timaeus*. But it was Christianity that conferred the modern meaning; cf. Keats' "Ode to Psyche": "O latest born and loveliest vision far."

as coming after a century of Christianity and the new Christian *agape*.

The legend, in its Appuleian form, is briefly this:

Psyche is a king's daughter, his youngest one. She incurs the jealousy of Venus, who wreaks revenge through her son, Cupid. The latter, as Virgil informs us, is obedient to his mother's bidding.³² Venus' plot is to have Psyche fall in love with the most despicable of the race of men, and it is Cupid's task to see that this is brought about. The goddess fails to count upon Psyche's charms, and the result is that Cupid himself falls enslaved. Cupid transports Psyche to a secluded spot; and there, he visits her by night, although she neither sees nor recognizes him. Psyche's sisters now appear upon the scene and strive to convince her that her nightly guest is a frightful monster. Nothing will do but Psyche must see for herself, although Cupid has warned her against all ill-advised curiosity. Heedless of these admonitions, she lights a lamp, in the determination to look upon her companion as he sleeps. She is amazed and rendered ecstatic by the young god's beauty; and in her transports, she lets fall a drop of burning oil upon Cupid's face, who straightway wakes and vanishes.

The bereft Psyche now becomes a wanderer over the earth, searching ever for the more than mortal beauty she has glimpsed and lost. It is in this condition that the vengeful Venus finds and takes advantage of her. The sorrowing Psyche is compelled to undertake a series of the most difficult tasks, the last of which leads her all the way to Erebus. For she must seek, in the world of the dead, for the box containing the precious ointment which is Beauty's own. She secures the box and starts back for the land of the living. Like Pandora's, her curiosity is too much for her, and she opens the box. The dense fumes that issue from it

³² "Paret Amor dictis carae genetricis." (*Amor*, I., 689.)

thereupon overwhelm her, and she sinks in a stupor.

Cupid then comes to the rescue; and at contact with his dart, Psyche is restored. The young Archer beseeches Jove to make his paramour immortal, which Zeus does, bestowing her at the same time upon her lover in marriage.

Such is the tale. There are, as stated, certain mythological elements in it which were common property before Appuleius' time. There is, for one thing, a patent suggestion of the Pandora legend.³³ But there is more than this; mythological affinities and derivations do not explain it all. There is a new conception of the soul in confrontation with love, amounting to a new conception of love. Two points in the myth stand out. One is the effect upon love of an unwise curiosity. The other is the motive of the purification and ultimate redemption of love through suffering, the restoration of the loved object, and the immortalization of psyche.³⁴

The Eros here met with is the old Eros the Destroyer (going back to the Vedic Śiva), that Eros whose acquaintance Sappho had made, and by whom she had been vanquished. But a new element, for all of that, has entered; and that is, the *psyche*. The problem of love, as set forth in literature, is henceforward never more to be the same. The human *reason* has now become a factor; the *reasoning vision* is there. This gives rise to a conflict which is of the stuff of art, of literature.

³³ Pandora has been seen as an etiological or earth-myth, her function being to release evil spirits from the *pithos*, or wine-jar ("grave"). There is also an obvious resemblance to Eve.

³⁴ On the Psyche myth, see L. Friedlander's *Über das Märchen von Amor und Psyche* (in *Darstellungen aus der Sittengeschichte Roms*), and cf. E. Rohde's *Psyche*. On Psyche in art: A. Conze's *De Psyches imaginibus quibusdam*, or Max Collignon's *Essai sur les monuments grecs et romains relatifs au mythe de Psyche*. See, also: *The Story of Eros and Psyche* (retold from Appuleius), together with *Some Early Verses*, by Edward Carpenter, 1923; and *Eros and Psyche, a Fairy Tale of Ancient Greece*, retold after Appuleius, by Paul Carus, illustrated by Paul Thumann, 1900.

We are to find the theme continued down the ages, in that juice which Puck squeezes upon Titania's lids, in the "crystallization" theory of a Stendhal, etc. We are to see the conflict in the *Adolphe* of a Benjamin Constant, to behold the femininely initiated revolt in a Madame de La Fayette. The battle is now on between reason and instinct, a struggle which C. G. Jung has outlined in his commentary on *The Secret of the Golden Flower*. Jung practically identifies Eros with instinct, intuition, as set over against the reason, the intellect.

"We must never," he says, "forget our historical premises. . . . we stumbled from the crudest beginnings of polytheism into the midst of a highly developed, oriental religion which lifted the imaginative minds of half-savages to a height which did not correspond to their degree of mental development. In order to keep to this height in some fashion or other, it was unavoidable that the sphere of the instincts should be thoroughly repressed. Therefore, religious practice and morality took on an outspokenly brutal, almost malicious character."

It is this character—"outspokenly brutal, almost malicious"—which we shall find the Middle Ages taking on with regard to the manifestations of Eros.

Bringing the problem down to contemporary terms, Jung goes on:

"It is our task to build up our Western culture, which sickens with a thousand ills. . . . Only after the decline of the Middle Ages, that is, in the course of the nineteenth century, when spirit began to degenerate into intellect, there set in a reaction against the unbearable domination of intellectualism. . . . Intellect does, in fact, violate the soul when it tries to possess itself of the heritage of the spirit. It is in no way fitted to do this, because spirit is something higher than intellect, in that it includes not only the latter, but feeling as well. . . . Therefore, I can only take the reaction which begins in the West, against the intellect in favor of *eros*, and in favor of intuition, as a work of cultural advance, a widening of consciousness beyond the too narrow limits set by a tyrannical intellect."³⁵

We can see from the legend of Cupid and Psyche that, even before the

³⁵ *The Secret of the Golden Flower*, by Richard Wilhelm and C. G. Jung, translated by Cary F. Baynes, 1932.

Middle Ages began, reason had been reared against instinct, against Eros; but the solution, it is to be noted, is in favor of the latter—it is Cupid's dart that mystically restores Psyche, and which leads to her immortalization. The medieval attitude toward Eros, on the whole, is an instinctive-intuitive one, sternly and incessantly, if often futilely, combated by Christian asceticism; for Christianity itself, philosophically, was in the Platonic-Augustinian, rather in that Aristotelian stream which was to come to the surface with the thirteenth-century Aquinas.

The Christian Agape in Practice

Evolving out of the decadent sex-ridden Roman Empire, which attained its literary apogee in the *Cena Trimalchionis* of Petronius and the *Epigrams* of Martial,—a civilization, incidentally, which possessed a special and highly developed erotic vocabulary,³⁰—Christianity, which had begun with love-feasts, was not long in becoming the inquisitor of Eros, assuming that character of which we have heard Jung speaking. Not that the Fathers or later Princes of the Church were all of them, by any means, prigs or puritans, or that the Church itself was not ready enough to adopt a blinking eye where practice was concerned; had not Augustine himself declared, "Suppress the courtesan, and you will overthrow everything through the caprice of the passions"? The whole question was intertwined with the thorny problem of evil in a God-made world, a problem with which Aquinas was to wrestle. For instinct, *eros*, had become—evil.

The new asceticism did not have an easy time of it. There was scandal from the start, scandal intimately associated with the Christians' own rites and dog-

mas. The early Christian *agapai*, in the Catacombs and elsewhere, were an occasion of malevolent gossip and slander; and even the Christian's crown, virginity, became more than once a snare. Especially was this true with the anchorites of the desert; since from the clamorous Pauline chastity to a fanatic anchoretism was but a step. St. Jerome is but one of a number of examples that might be cited; the demon of lust, of a carnal concupiscence was ever busy. And then, there were those weird heretical sects which sprang up, and which were a source of scandal to the orthodox, by reason of their practice, and often their preaching as well.³⁷

It was all by way of being a bitter struggle with that insuperable human erotic strength which to the Christian is weakness; and out of it was to come an inevitable hypocrisy and double-dealing, which becomes so ingrained as to sink to the subconsciousness. It is in this manner, and this manner only, that the blithe existence side by side of a frequently extreme licentiousness and a dogmatic piety, particularly in Renaissance writers down to the triumph of Protestantism, is to be explained. It is the chthonian Eros asserting his rights, maintaining his sway.

The Earth-Eros

For the Earth-Eros always has held his own, and doubtless always shall. He is to be found deep-fixed in the heart of folk-story and folk-song.³⁸ Even the Protestant, more prudish usually than the Catholic, is unable to avoid him; as witness the amusing collection of erotic poems and epigrams at the hand of an "anonymous Protestant" of the sixteenth century, which we find in Polish.³⁹ For a French correspondent of

³⁰ See Richard Reitzenstein's *Zur Sprache der lateinischen Erotik*, 1912.—For an excellent view of Petronius by a modern Italian critic, see the essay by Giuseppe Antonio Borgese, translated by the present writer and published in the Paris-American review, *This Quarter*, July-August-September, 1930.

³⁷ Lacroix, *op. cit.*, Part ii., Chapter iv.

³⁸ Consult *Contributions au folklore erotique: contes, chansons, usages, etc., recueillies aux sources orales*, Paris, Kleinbron, 1906.

³⁹ *Anonima-protestanta XVI wieku Erotyki, fraszki, obrazki, epigramaty. Z rękopisu wyciął Ignacy c przanowski. Krakow, 1903.*

approximately the same period, we have but to consult *Le Parnasse érotique*.⁴⁰ The motive runs through Middle English,⁴¹ and occasionally, as in the old Swabian love letters which Albert Ritter has collected,⁴² rises into real poetry.

This is the deep-toned voice of the soil, of Rhea, the Earth-Mother, the full-breasted and big-buttocked; not the decadent-simpering eros of the voluptuary-aesthete, of the sort who to-day collects Marquis de Bayros drawings, and who revels in such a work as Fuchs' *Geschichte der erotischen Kunst*; ⁴³ it is not the god, ordinarily, of the collector of "forbidden books" and "tabooed literature," ⁴⁴ the amateur of "curiosa." This is, rather, that Eros whose voice is heard in, and who inspired, the admirable seventeenth-century collection of popular workingmen's songs, *La Caribarye des artisans*.⁴⁵

This "Workingman's Medley" is not made up of *bergeries*, or plaintive pastoral love-ditties such as were the fashion of the period; the pieces have in it, rather, that sharp tang and frequently satiric verve which is characteristic of the popular ballad-maker, varying from

⁴⁰ *Le Parnasse érotique du XVe siècle, recueil de pièces avec une préface et des notes, par J. M. Angot, 1908.*

⁴¹ See the *Untersuchungen*, etc., of Otto Heider, 1905.

⁴² *Altschwabische Liebesbriefe, eine Studie zur Geschichte der Liebespoesie, 1908.*

⁴³ *Geschichte der erotischen Kunst. Erweiterung und Neubearbeitung des Werkes: das erotische Element in der Karikatur, mit Einschluss der ersten Kunst. Von Edward Fuchs, 1908.* Also, the *Geschichte der erotischen Literatur*; etc.

⁴⁴ *Forbidden Books, Notes and Gossip on Tabooed Literature, by an Old Bibliophile, Paris, 1902.* See also the works mentioned in Note 76, below.

⁴⁵ *La Caribarye des artisans, ou recueil nouveau des plus agréables chansons, vieilles et nouvelles, nouvelle édition collationnée sur le seul exemplaire connu de l'ancienne et augmentée d'un avant-propos et des notes explicatives, par M. A. Percheron, 1862.* Brunet speaks of this collection as being curious and extremely rare; at the time of the edition here referred to, there was, according to M. Percheron, but one copy known to be extant, the one in the Bibliothèque de l' Arsenal.

the charming sensuousness of a "*Chanson Amoreuse*":

Baise moy ma Jeanneton
Baise moy ma mie
Que je touche ton teton,
Que je le manie;
Tes cheveux entre mes doigts
A l'ombrage de ces bois,
La que je te baise,
Mon coeur à mon aise.

to the stinging point of a "*Chanson Plaisante*," in which a lass with a dowry of four hundred francs, married off by her father, finds that she has been deceived by that which her husband brings to the marriage, and laments

D'avoir achepté si cher
Son petit morceau de chair.

The laughable dénouement is:

Il ne parle et ne dit mot
Et moi je suis en malaise,
Car sa viande dans mon pot
Ne paroît pas une fraise.

The Earth-Eros is neither a puritan nor an anchorite, and laugh when you can and weep when you must is his gospel. There are seasons a-plenty for weeping, and Eros is sometimes the cause of them; meanwhile, wise in the wisdom of winters remembered, Mother Rhea will shake her fat sides and laugh. And so it is, we discover in all the healthy manifestations of Eros an element, and often a preponderance, of rump-thwacking horse-play and the deep-belly-rumbling chuckle, an aspect which has been given classic expression by Rabelais. It was Eros' good earth-laugh which, during the centuries of night, and in the face of a fanatic denial of the deepest instincts of the earth buried in man, tended to keep the world safe and sane.

The Goliards; Satiric Mingling of the Christian Eros and the Earth-Eros

With all of Christianity's vaunted exaltation of womanhood, it is instructive to see what woman has become at a time when the shadows of what are commonly, if somewhat inaccurately,

known as the "Dark Ages" begin to lift. "*Janua diaboli, via iniquitatis, scorpionis percussio, nocivum tenus*—the gate of hell, the path of iniquity, the scorpion's sting, a deadly snare": such was the language which one church body employed in describing her. From Plato's "silly, light-headed creature"—*fragilitas, imprudentia, imbecillitas* were the epithets employed by the ancients in speaking of her⁴⁶—she had become the *fax satana*, the "brand of Satan." The view propagated by the clergy had percolated through the people; and as a result, we have a body of biting medieval satire leveled at woman's defenceless head.⁴⁷ She had come to be the embodiment of every weakness, every sin, from fickleness and infidelity to what you will.

We find this theme being taken up with a vicious intensity by Jean de Meung, in the thirteenth century, in the *Roman de la Rose*.—the same century that saw the birth of Dante's Beatrice; and the question of the native worth or worthlessness of woman was to be still further threshed out in the *Querelle des femmes*, that hundred years' wordy war, which gave rise to Rabelais' magnificently rollicking Third Book, of which something more is to be said.

But nowhere, perhaps, does the popular attitude toward women and love which grew up during the Middle Ages come out more clearly than with those gay student dogs, the Goliards (the *Vagantes*, wandering scholars or clerks);⁴⁸ it is with them that we be-

hold, in the twelfth and thirteenth centuries, an emerging fusion of medieval motives: a fusion of the wholesome Earth-Eros with that suspicion, evolving into contempt, of womankind which had been fostered by the clergy. With these roystering disciples of Bishop Goliath, woman was the subject for a tavern toast or a tavern amour; and their healthily coarse wit, rendered with a trifle too much of delicacy by John Addington Symonds, in his *Wine, Women and Song*, was compounded out of what is known as "mother wit" and (more or less subconsciously, it may be, for the Goliards were on none too good terms with the clergy)⁴⁹ out of churchly bred distrust.

The end of the matter is, the Church, limiting the conception of love to ecclesiastically sanctioned child-bearing,⁵⁰ had succeeded in all but vanquishing the higher Eros, which was to be revived outside the marriage bond by the poets of chivalry; in the meanwhile, the Earth-Eros, as always, persisted, making cynical use of the very darts which were hurled against its other self.

⁴⁹ From 1227 on, at least, or the date of the Council of Trent, the hand of the Church was distinctly against the *Vagantes*.

⁵⁰ This is clearly indicated in Book VII. of the *Apostolic Constitutions*: "... corruptio est proprii corporis, quae non adhibet ad generationem filiorum, sed tota ad voluptatem spectat, quod est indicium incontinentiae non autem virtutis signum." Lacroix quotes St. Clement (Paedag., II, 10): "The only object of a union is to have children, in order to make of them god-fearing men and women. It is against reason and against law to seek in marriage nothing but pleasure; but one should not, therefore, abstain from it from fear of having children. Nature forbids, alike in infancy and in old age, an immodest relation between the two sexes; those to whom marriage permits these carnal relations must be continually attentive to the presence of God, and must respect their bodies, which are his members, by abstaining from all glances, all contacts which are illicit and unclean." And the *Constitutions*, the Fathers and the Penitentials go on to forbid (describing in great detail) any but orthodox modes of intercourse between husband and wife.

⁴⁶ See the present writer's paper referred to in Note 27, above.

⁴⁷ Consult Lee Neff's *La Satire des femmes dans la poésie du Moyen-Âge*, 1900.

⁴⁸ Lacroix none too accurately describes the Goliards as "depraved clerics who were called the sons of Goliath (*cleri ribaldi, qui vulgo dicuntur de familia Goliae*, in the *Constitutions* of Gautier de Sens, in 923)." This is anticipating a little; "sons of Goliath" may have been a term applied to the reprobate clergy as early as the tenth century, and earlier; but we are not here dealing with the *Vagantes* proper, although many of the latter may have been, and doubtless were, dissolute monks.

The Troubadours, Poets of Chivalry

The ideal of chivalry, which found expression from the end of the eleventh century on, with the Provençal troubadours and their imitators elsewhere, is perhaps embodied for the average reader of English in such a production as the Victorian Tennyson's *Idylls of the King*. Tennyson's poem, however, represents a high degree of idealization. Chivalry does not seem quite so chivalric, when we read, as we do in the old records, of a king's striking his consort, until "the blood streamed down her beauteous countenance." We now see that chivalric love had an economic side, and very largely, an economic basis as well; it was by way of being a poetic institutionalization of love outside of marriage, since marriage, the *mariage de convenance*, had come to be governed by the laws of property-succession—so did a matter of crowns and castles give rise to a school of love and literature in century-dimmed Provence!

The end of chivalry, in short, was adultery, poetic or factual. As a feminine singer of the twelfth century, Marie de Champagne, puts it:

*Gens mariés
Ne se peuvent bien loyaument
Entr'aimer.*

"Married folk cannot very loyally love each other."

One thing to be noted in connection with troubadour love is the persistence of the Earth-Eros alongside an exalted admiration, or professed admiration, of woman rooted in the cult of the Virgin. This is evident in such a work as the *Cantigas* of Alfonso el Sabio, Spain's "Rey-trovador," or "Rey-poeta," as preserved in the archives of the Escorial. The lascivious pages in such a compilation always give the pious commentators something to explain away.

Influence of the Courts of Love

The troubadours were an expression of the spirit that animated the Courts of Love, that institution of gallant

casuistry whose Decrees, as collected toward the end of the fifteenth century by Martial d'Auvergne (the *Arrêts d'amour*) make such curious reading today. While nuns and abbesses were writing down the recipes of the convent kitchen in a barbarous churchly Latin, the weighty questions of love were being discussed and adjudicated in the vulgate, and often in the *carrefour*, or public square. It was Louis VII.'s chaplain, Maître André, who provided the code for these "*Parlements de gentillesse*," under the title of *Principalia amoris praecepta*. As for the Decrees, as we find them in Martial d'Auvergne, while they speak, in high-sounding terms, of chivalry and woman's honor, they are none the less animated by a certain refined libertinism, and there is no longer so much scruple in having resort to love's "last solace" (the *dernier soulas*).

The Trouvères and Their "Gai Science"

The trouvères, or wandering bards of northern France, brought in a note of earthy reality, one that is lacking in the lays of the higher-headed troubadour. Plebeian rather than knightly in origin, a product of the people and not of the Courts of Love, the artisan singers of the *langue d'oïl* exhibited a wholly popular verve, humor and maliciousness. They were addicted to the plainest of speaking, to calling a spade a spade, in a current and picturesque idiom. Their *romans*, *lais*, *fabliaux* and *contes* constitute a body of "*gai science*" upon which Boccaccio, Rabelais and later writers have freely drawn. The attitude of the trouvères toward sex is reminiscent of that of the Goliards, and of the Courts of Miracles, those centers of prostitution which were commonly to be found about the public wells.

A gradual change in the character of the trouvères' audience is to be noted. This was in large part due to the institution of *jonglerie*; for it was the *jongleurs*, or vagabond minstrels, not literary creators themselves as a rule,

who went about the country popularizing the *chansons de geste* (running sometimes as long as twenty-thousand verses and more) and other chivalric compositions of the trouvères. In the same class as the *menestriers*, the fiddlers or hurdy-gurdy-players, the *jongleurs*, by their exceedingly dissolute mode of life and of gaining their livelihood, tended to bring disrepute upon poetic chivalry, or chivalric poesy, as a whole.

This reaction attained a peak during the somewhat puritanical reign of France's sainted king, Louis IX., who, according to one reading of Joinville, "expelled from his realm all *besteieurs* and other players at sleight-of-hand, through whom came to the people much lasciviousness." The royal example was followed by the nobles, and the *jongleur* and the *menestral*, as a result, now found themselves excluded from the châteaux, where they formerly had been welcomed as a remedy against boredom. They now had to turn to a larger public, composed of the merchants, the bourgeois, and their repertory accordingly altered to suit the tastes of this new audience, which was more interested in a good story with a liberal spattering of smut than in the noble *chansons de geste*. This is the audience to which we shall soon find Boccaccio catering, and it is to be an increasingly important one from now on.

While the troubadour had fallen silent by the end of the thirteenth century, the trouvère lasted well on into the century following.⁵¹ Smut of a good, wholesome variety, and frequently not without literary quality, had out-

lasted the always somewhat false and posturing ideal of chivalry, one that was destined to remain an ideal, that is to say, an unattainable dream.

A Feminine "Revolution"

A new reality has come in; and while love still holds something of its romantic glamour, and while gentlemen like Jaufre Rudel still become crusaders for the love of ladies like the Countess of Tripoli, literary love has nevertheless left the court and castle to take refuge in the bourgeois tavern and at the street-corner, and has already found sanctuary as well in the *chambre des dames*. For woman is no longer languishing in ivied turret or sequestered bower, but is beginning to take the offensive in the amorous field.

Such is the meaning of that feminine "revolution"—the word is M. Joseph Bedier's—which, led by Eléonore d'Aquitaine, took place about the middle of the twelfth century. Woman is now asserting her right to her soul in love, and we have a whole school of women poets springing up: Beatrix, Countess of Dix; Marie de Ventadour; Christine de Pisan; and, dean of them all, as M. Bedier calls her, Marie de France.⁵² This feminist-poetical movement, the French scholar would have us believe, "in its suddenness and in the importance of its results, is only comparable to the Renaissance or to the Romantic Movement."

One has the feeling, in reading these women troubadours, that many if not most of them sang, as did Christine de Pisan, "*par couverture*"—to cover up their own hearts. The fourteen-year-

⁵¹ A good example of the trouvère in dramatic form is the *Jeu de Robin et de Marion* of Adam le Bossu, an artisan trouvère of the thirteenth century, in which we hear one character accusing another of being an "*ord menestreus*," or "filthy minstrel." This and other examples will be found in the very inexpensive series, *Les Classiques du Moyen Âge, collection des textes français et provençaux antérieurs à 1500*, published under the general editorship of Mario Roques (Société des Anciens Textes Français). See, in particular, No.

6, *Le Jeu de la Feuillée*, also by Adam le Bossu (*Le Jeu de Robin et de Marion* is No. 36); No. 31, *Le Mariage des sept arts*, par Jean le Teinturier d'Arras (a fourteenth-century work); No. 39, *Jongleurs et troubadours gascons des XIIe et XIIIe siècles*, ed. par Alfred Jeanroy; for bibliographies of French-medieval and Provençal chansonniers, Nos. 16 and 18; etc. (a number of specimens of the *chansons de geste* will be found in the series).

⁵² See Jean Larnac, *Histoire de la Littérature féminine en France*, 1929.

old, early-widowed bride of a gentleman of Picardy, Christine found that her task was "to sing joyously out of a sorrowing heart," as in the plaintive lines:

*Seulète suis, et seulète veux être,
Seulète m'a mon doux ami laissée.*

Christine was to become a champion of her sex, as in her *Cité des Dames* (1405), which has been seen as marking an important stage in the history of feminine emancipation; and she was to hymn, in 1429, the glory of another woman champion, none other than Jeanne d'Arc, who had been accused by a misogynist clergy of "wearing the trousers" (*de porter culotte*). "One of the most authentic *bas-bleus* in our literature," M. Lanson has termed her; but her real significance, possibly, lies in the motives which led to her turning writer; she would have preferred a husband, children and a fireside; writing was for her, at once, an emotional outlet and a means of earning a livelihood, and in this, she is the first of a long and distinguished modern line.

It was Éléonore, granddaughter of Guillaume de Poitiers, Duke of Aquitaine and oldest of the French troubadours, who, by marrying Louis VII. of France, and later, Henry II. of England, was to serve as ambassador to the comparatively uncivilized North. It was she who, especially at the court of the Plantagenets, brought in those feminine refinements which had been born in the South; and her two daughters by Louis, who became French countesses, carried on her work. Noble and royal ladies now began turning their courts into asylums for the Muses, and were proud to be known as protectors and patrons of the arts; in which may be glimpsed the genesis of the modern *salon*, so essentially Gallic an institution, with its traditional *place aux dames*.

As for Marie de France, according to M. Bedier, she is "with Marguerite of Navarre, who comes three centuries later, the most pleasing of our French women story-tellers." A modern femi-

nine literature, the short of it is, had been born.

What woman is looking for now is a newer, higher type of Eros, one that will not conflict with that "soul" which she has just begun to discover, a discovery that is soon to be intensified by the Renaissance revival of Platonism; she is, in other words, in search of a love that will not be incompatible with the preservation of a respect for her own personality, of which she has become recently conscious. This is a quest which we are to see continued by Marguerite of Navarre, and on down to Madame de La Fayette's definite revolt against the tyranny of love. What we find occurring, as far back as the twelfth century, is a certain "Renaissance of the heart," to make use of Michelet's phrase,⁵³ one that is not without its relation to that widespread renaissance of feeling, as it might be described, centering about St. Francis of Assisi and his birds.—coming, curiously enough at about the same time as that other revival, the revival of Aristotle, the reasonable rock upon which the modern Church is founded, in the philosophy of Aquinas.

We shall find these two streams, the mystic-Platonic-Augustinian and the rational-Aristotelian-Aquinian one, pouring into the tossing sea of new-found life which is the Renaissance; and the influence of each may be traced down the succeeding centuries, in religion and philosophy, in literature and art, in society and politics.⁵⁴ If it be a case of the heart and its "reasons" versus the Reason, it is not so strange,

⁵³ "*La vraie renaissance est la renaissance du cœur.*"

⁵⁴ Of the Platonic-Augustinian stream, for instance, is the whole of the great modern-European wave of irrationalism (Eros, or the intuition, as with Jung, versus the intellect, the reason), as philosophically, and characteristically, embodied in Bergsonism (the "dynamic stream," which may be traced from Royce to Gentile, taking in Nietzsche), and as reflected in literature and art (French Surrealism, e.g.) and in other departments of life, not forgetting politics, the new Fascist mysticisms, etc.

perhaps, if woman in the twelfth century is to be found taking the former side. In any case, as has just been stated, there can be little doubt that this "*renaissance du coeur*" is but part of the larger one, of which St. Francis is the type, and which was finding its expression before long in other fields, in the fresh-glowing realism of a Giotto, in the new sensitiveness of Gothic architecture, and finally, in Dante's vision of his Beatrice.

Dante and the Amorous Ecstasy

It is Dante who brings the highest idealization of woman yet known, in his Beatrice, and in his great love-poem, the *Vita Nuova*, the influence of which comes down through the Renaissance to Petrarch with his *Sonnets* to his Laura, and on down, through the nineteenth-century Rossetti and others, to the present time. What Dante gives us, with his "*dolce stil nuovo*," is a mystic-aesthetic ecstasy of love that owes not a little to medieval predecessors, poet-hymn-writers and philosopher-theologians, such as St. Bonaventura, Jacopone da Todi, etc.⁵⁵ Dante's tremendous power lies in his genius for rendering objectively sensible and real, as to a supreme degree in his *Divina Commedia*, the world of mystic ecstasy, whether amorous or religious, or as often, a blend of the two; the very sound of his verse in the original has a sensuous effect which no translation could ever produce.⁵⁶ Dante will remain for all time the poet of an idealized love elevated to a religious intensity. On the linguistic-literary side, the weight of his genius is cast

into the scale in favor of the employment of the vulgate, the language of the people.

The *Roman de la Rose* and the "Woman Question"; the Question of Obscenity

The *Roman de la Rose*, for some two centuries, from the thirteenth to the fifteenth, was a sort of breviary of "gallantry," and hence, will have a light to throw for us upon the early-Renaissance conception of love, following the Dantesque idealization.

The author of the first part, Guillaume de Lorris, who died about the end of the thirteenth century, after having composed some four thousand verses, appears to have set out with the intention of producing a work in the genre of Ovid's *Ars Amatoria*, "*où l'art d'amour est tout enclose*." On the whole, he expresses a doubt of love, as of a disease against which "neither herb nor root is of any avail," the only efficacious remedy being to flee it, all of which has a faintly pre-Shakespearean ring.

The poem was completed by Jean de Meung, a doctor and master of arts of the University of Paris and an avowed enemy of the female sex. Abandoning the original plan of the poem, the new author took up with viciousness a theme which we have seen foreshadowed in the pot-house taunts of the Goliards, and became famous for his railleries against women. According to Jean de Meung, a good woman was as rare as the Phoenix, and all were prostitutes, present, past or to be. In this, we have the launching of the noisy *Querelle des femmes*, which has already been spoken of, and which will be described in more detail a little later. The influence of so imposing and popular a work,—one that was to be seen beautifully transcribed and adorned with miniatures in all the fashionable libraries of the age,—was naturally considerable. It did not go uncombated.

Among those who rose to protest was Christine de Pisan, who, as a

⁵⁵ For a late and thorough study, see Luigi Tonelli's *Dante e la poesia dell' ineffabile*, 1934.

⁵⁶ The English-language translation which, in the present writer's opinion, comes nearer than any other to capturing the verbal magic of the original is that by Jefferson Butler Fletcher, *The Divine Comedy of Dante Alighieri*, 1931. Fletcher's success seems due in good part to the metric scheme he hit upon by way of compromise, the employment of rhymed but unlinked tercets for Dante's *terza rima*.

preude dame and herself the author of a moralistic treatise for women, entitled *Les Trois Vertus*, was naturally incensed by the poet's slurs; and although she had had occasion to defend her own spade-is-a-spade language, she proceeded to attack Jean de Meung for his obscenity, and declared that the *Roman de la Rose* was "very indecent reading in many places." For her own part, she had called woman the "vessel, retreat and inn of all vices"; but in doing so, she had spoken as the Christian moralist, bent upon leading her sisters back to the virtuous path. In attacking Jean de Meung's poem, she was soon to have a masculine ally in Martin le Franc, canon of the Church and author of the *Champion des Dames*. From now on, down to the middle of the sixteenth century, when the discussion attained a climax of intensity, the "Woman Question" was to be an ever-ready source of literary thunder.

There are numerous other of the Romances of Chivalry which might be drawn upon in connection with the subject of love and literature (the public probably thinks of such a tale as the *Aucassin and Nicolette*, popularized by Andrew Lang's translation); but the *Roman de la Rose* is the work that is significant for our purpose here.

Chaucer and the "Romaunt"

It was Geoffrey Chaucer who was to bring across the Channel the first portion of the *Roman de la Rose*, in his *Romaunt of the Rose*. This was that portion which had been composed by Guillaume Lorris, not the violently anti-feminist verses of Jean de Meung. Chaucer's own work shows the influence of Lorris, and of the Italians, including Dante, Boccaccio and Petrarch. The erotic element, properly speaking, is however not a heavy one with the English poet. In his *Canterbury Tales*, on the *Decameron* pattern, it is only in one or two passages, such as the conjugal reminiscences of the

Wife of Bath, or the conclusion of the Reeve's Tale, that we encounter a marked Rabelaisian attitude toward sex on the part of the author of the *Parlement of Foules* and the *Legende of Good Women*. Chaucer, when all is said, is, above all else, a great master of poetic technique.

Petrarch and His Laura; a Scholar's Passion

But before Chaucer, we have, in Italy, two writers destined to go down as bright names to posterity, each of whom makes his contribution to the theme of love. They are Petrarch and Boccaccio.

Petrarch is essentially the scholar, and his passion for his Laura, as embodied in his *Rime in vita e morte di Madonna Laura*, better known as his "*Canzoniere*," however real it may have been in genesis and in lasting sentiment, is that of the man of the study, as much in love with his verses to his mistress as with his mistress herself. Yet his *Canzoniere* is, contrary to his own expectations, the more enduring part of his production; for he, as a pioneer Humanist in love with classic antiquity, gave his preference to his Latin compositions, which today are forgotten by all save the erudite. Petrarch's reproach to Boccaccio, à propos of the *Decameron*, is revealing: "too voluminous, written for the vulgar, and in prose." The author of the Sonnets to Laura has, to tell the truth, been laden with much of the blame that belongs to his imitators, those "Petrarchists," who lacked the master's power, as imitators always do.

As to the identity of Laura, that is still shrouded in uncertainty. Petrarch met her on April 6, 1327, in the Church of St. Clara at Avignon. Some have believed her to be a creature of fancy, but this view is rejected by scholarship. She was a married woman who accepted the poet's homage, while refusing him more intimate relations; so much is known of her; the rest is poetic darkness.

**Boccaccio, or a Lover's Flight from
Biography**

It is a remarkable fact that the *Decameron*, one of the world's great objective masterpieces of literature, in reality represents a flight from an over-subjectivity, on the part of a lover who before had been all too much given to autobiography. For Boccaccio's earlier works are nothing if not autobiography, thinly veiled in allegory. His two earliest compositions, the *Filocolo* and the *Fiammetta*, both show this. They at once reflect the charm of that Naples which he loved, and the passion he had there conceived for a young married woman, Maria d'Aquino, natural daughter of King Robert. It is Maria who is his "Fiammetta," and she inspires all his work prior to the idyllic *Ninfale Fiesolano* and the *Decameron*. "Fiammetta" is said first to have given herself to Boccaccio, and then to have betrayed him; and in his *Teseide* (on which Chaucer drew in his "Knight's Tale"), the lover depicts the jealous torments he went through. Again, in the *Amorosa Visione*, we have an acrostic picture of the possible happiness of love. In short, it is love, love, love with Boccaccio. The *Fiammetta* is a love tale told, with novelty, as the loved lady's autobiography.

Came, then, in 1348, the Black Death, which has been taken as marking the end of the Middle Ages. This was, it may be, the sort of tremendous experience that was needed to cure an ingrown ease of subjectivity. In any event, in his *Decameron*, which takes the Plague as a starting-point, we come upon a new Boccaccio. It is a purported collection of tales told by three youths and seven ladies who are fleeing the epidemic at Florence. The book is filled with irony, humor, and at the same time, a certain human indifference. It is at once gay and sad. As to its "immorality," that is almost wholly incidental, and accidental, and what there is, the author himself is to deplore in later life.

In this sense, the *Decameron* is not

to be looked upon as belonging to the field of erotic literature, although it is usually so considered. It is as a piece of literature that it stands, one portraying the life of every social class, and written, as has before been pointed out, for the new upcoming middle class. In it, we find the writer who, in his *Teseide*, had shown the influence of Virgil, and in his *Ameto*, that of Dante, now developing into a creator of first rank, who is in turn to influence many writers, all over the world and down the centuries.

Boccaccio's technical importance is not to be minimized,—his first employment of *ottava rima*, for example, in his *Filostrato*; and his *Decameron* stands out as the first great prose work in the Tuscan tongue; but it is as the lover who, jarred out of amorous autobiography by the terrible Black Death, produced a masterpiece of objective writing, that we will remember him here.

**The Fifteenth-Century "Poets of
Prostitution"**

It is in France, in the fifteenth century, Villon's century, that we find that distrust of woman and her virtue which had been a theme of medieval satire, and which had attained a point of vociferous expression in Jean de Meung, come to a disillusioned and frequently none too lovely fruitage, in a deliberate hymning of the prostitute and the brothel on the part of the poets of the day. Had not the author of the second part of the *Roman de la Rose* declared that all women are prostitutes, at one time or another? True, the women had spoken up in protest, in the person of Christine de Pisan, and one of male sex, Martin le Franc, had espoused their cause; but in the fourteenth century, a churchman, the Bishop of Terouenne, is to be seen composing a poetic treatise against marriage, entitled *Matheolus*, and in the middle of the following century comes the *Grand Blason des Fausses Amours*, written by Guillaume Alexis, a monk of Normandy, and remarkable for the indecency of its

language; and along about 1380, we have Eustache Deschamps' *Le Miroir de Mariage*, with its more than twelve thousand violent verses against women and wives. The versifiers now seem, as Martin le Franc observes to draw their inspiration from the *pays d'amour*, or "well of love," that well which in accordance with Mary Magdalen tradition, formed the center of the profligate Courts of Miracles.

Prominent among these "poets of prostitution" may be mentioned Guillaume Coquillart, author of the *Droits nouveaux*, a sort of code of libertinism. In private life, Coquillart was a legalist, being an official personage of Rheims. He had, by reason of his office or otherwise, a thorough-going acquaintance with the life of the *gauloises*, or gay lasses, of his province, and was possessed of a nimble lawyer's wit, which comes out in some of the *causes grasses* that are "pleaded," with a wealth of obscenity, in his book. Coquillart is said to have died a rake to the last, and possibly a rake's death. The poet Clément Marot later did a punning epitaph on him, and the Archbishop of Rheims, the well known Jean Juvenal des Ursins, acted as his testamentary executor.

A good deal more important poet of the same period, however, who remains one of the world's great poets, is François Villon.

François Villon: "Ordure Nous Suyt"

Villon's work, his *Petit Testament* and his *Grand Testament*, are too well known to call for extended commentary here. It may merely be pointed out that this sublime "*mauvais garçon*," pickpocket, thief and pimp by profession, before being sentenced to death on the scaffold, had been reared, so to speak, in houses of ill-fame. He gives a touching picture, which shows that he was fully conscious of his milieu, in the lines:

Ordure avons et ordure nous suy
.....
En ce bourdel où tenons nostre estat.

His life, apart from that light-fingered occupation which brought him his livelihood, was largely spent in *repues franches*, in the company of "*femmes diffames*"; and through his poems passes a procession of them: the beautiful Heaulmière; Margot; Marion l'Ydolle; big Jehanne de Bretagne; etc. We have, also, an intimate picture of the lives and reactions of these women and their male companions,—the most intimate and convincing that is afforded in all literature, for the reason that it comes from the hand of a fine poet who had lived the life he was portraying. Among the examples that may be cited are Heaulmière's lament over her pimp (*Or ne me faisoit que rudesse*), or the deeply moving and graphic lines, *Si je ayme et sers la belle de bon haict*.

Villon's influence over subsequent poets has been a perduring one. It is to be seen coming out in the nineteenth-century Ernest Dowson, and more recently, in the modern Russian poet, Essenin, not to mention a host of others.

The Topography of Parisian Prostitution

While reading the fifteenth century poets, it is well to turn back, by way of topographic orientation, to a thirteenth-century piece, the *Dit des rues de Paris*, by one Guillot, otherwise unknown.⁵⁷ This is a vivid rhymed Odyssey of an adventurer among the various ill-famed streets and brothels of the French capital; it is by no means dull reading. Such a work as the *Journal d'un bourgeois de Paris* will likewise serve to cast a light upon the period.

Other erotic poets of the fifteenth century will be found in a work previously referred to, *Le Parnasse érotique*.

Louis XI. and His Merry Tales

The favorite literary theme of fifteenth-century France is reflected at court by Louis XI.'s fondness for the merry tale and the risqué anecdote.

⁵⁷ A work first published in 1754, from a manuscript discovered at Dijon.

The monarch had had an early education in gallantry, and a light upon his character and habits is to be had in the *Chronique scandaleuse de Louis XI.*, attributed to a public functionary of Paris. His court was frequented by a number of able raconteurs, including Antoine de la Salle, Dampmartin, Jean de la Roche, and others; and seated in the great chimney-corner nook of an evening, they would draw upon their art to amuse the King. The result was the collection known as the *Cent Nouvelles Nouvelles du Bon Roi Louis XI.*, a work which really stands at the end of the old French period and on the threshold of the new Renaissance era. The tales are amusing enough in their way, but are decidedly lacking in that vitality which distinguishes the masterpieces in the genre, such as the *Decameron* or the *Canterbury Tales*, an earthy-erotic vitality which, a fraction of a century later, is to burst all bounds in the work of François Rabelais.

Before we come to Rabelais, we may pause at the court of Louis XII. to glance at Jean Marot, poet-in-ordinary to that most prudish of queens, Anne of Brittany. Louis himself in his youth appears to have been altogether human, but as a sovereign, he was almost as straight-laced as his consort, and the general atmosphere of the court was a puritanical one. Marot, to please the queen, had composed such highly moral works as the *Doctrinal des Dames*, inculcating the precept "to be chaste while being beautiful," and to this he had added, also in obedience to his royal mistress, a *Vray Disant Avocat des Dames*. All this, however, was a labor of obligation; when left to his own devices, Marot was a very "free" poet indeed, as in his *Voyage de Gênes*, descriptive of the Italian wars, and many of his roundelays.

François Rabelais and the Querelle des Femmes

The very word, "Rabelaisian," has become synonymous, if not with downright obscenity, with a certain broad,

coarse humor, in language and in attitude, on the subject of sex. There is, it is true, no little justification for this, but it is far from being the whole truth. Rabelais was essentially the Man of the Renaissance,⁵⁸ who, enamored of the, in a manner of speaking, newly rediscovered intellect, was animated like Bacon by a desire to take all knowledge for his province. This is his primary and outstanding significance. He was not, from one point of view, a sensualist at all, in the sense in which that term is commonly understood; or rather, he was if anything an intellectual sensualist. The romantic or chivalric Eros would seem to have meant nothing to him. His life, so far as the documents go,—if we except that mysterious infant, Théodule, who was buried at Lyons, and at whose grave cardinals stood—was singularly barren of women. It is not strange, accordingly, if Eros meant to him the Eros of the people, the wholesome, laugh-begetting Earth Eros.

Rabelais' work, from the point of view that concerns us here, is not to be understood save as a document in the Querelle des Femmes, particularly his Third Book, in which we have a topical crystallization of his view of the sex; although his attitude comes out in passages in the other books, such as Friar John's sexual braggartism, Panurge's description of the building of the walls of Paris, etc. Something must be known of the Querelle, and Rabelais' position with reference to it must be understood, if the full import of his sexual attitude is to be grasped.⁵⁹

⁵⁸ See the present writer's *François Rabelais, Man of the Renaissance*, 1929.

⁵⁹ It is Abel Lefranc, the great French Rabelais scholar, to whom credit is due for bringing to light the implications here dealt with; his views, with general data on the Querelle, will be found summarized in the Translator's Note to Book Third in the present writer's version of Rabelais' works: *All the Extant Works of François Rabelais, An American translation, with a critical text, variant readings, variorum notes, and drawings attributed to Rabelais*, by Samuel Putnam, with illustrations by Jean de Bosschère, 1929, 3 vols., folio.—See, also, the *Oeuvres de Fran-*

The *Querelle des Femmes*, a controversy which had come to include the whole subject of Feminism, is one, as has been seen, that has its roots in late medieval and early Renaissance satire, being traceable back to the Goliards, Jean de Meung, etc.; and we have heard Christine de Pisan and Martin le Franc raising their voices on one side, with a fifteenth-century monk, on the other hand, coming to the attack in the *Grand Blason des Fausses Amours*. It is about the middle of the fifteenth century that the "quarrel" begins to gather an intensity that increases down to the eve of the Wars of Religion, the argument raging with especial violence from about 1540 or 1542 to 1550 or 1555, with Rabelais' Third Book, coming in 1546, as an episode in the wordy battle.

The institution of marriage, in the course of the fray, had been badly battered in the breach, and had furnished the subject for a number of works, pro and con, among which may be noticed the *Quinze joies de mariage*, or Fifteen Pleasures of Marriage, questionably attributed for long to Antoine de la Salle, but which may date as far back as the beginning of the fifteenth century.

Among other works which influenced, or may have influenced, Rabelais may be noted: the *Sylviae nuptialis libri sex*. . . . *An nubendum sit vel non* of the juriscunct Jean Nevizan, which was published at Paris in 1521 and reprinted numerous times; Erasmus' *Institution of Christian Marriage*, in which the gravity of the institution is stressed and marriage is placed above celibacy (although the same author, in his *Praise of Folly*, had not been quite so easy on the fair sex); the *De legibus connubialibus* of Rabelais' legal friend, André Tiraqueau, published in 1513, with a number of revised and enlarged editions, one of which appeared in

1546, the same year that saw the publication of the Third Book; Bouchard's reply to Tiraqueau, in his *Tes gynaikeais phytles, id est, Feminei sexus apologia*, 1522; the *De praecellentia feminei sexus* of Cornelius Agrippa (the "Herr Trippa" of Rabelais' Third Book); the *Controverses de sexe masculin et féminin* of Gratian (or Gratien) Dupont, Seigneur de Drusac, containing a series of violent invectives against women, by an author reported to have been unhappily married, published at Toulouse in 1534; the *Parfaicte amyce* of Antoine Heroët, a defense of the ladies, published at Lyons in 1542, which ran through many editions and became a best-seller of the day; etc., etc.

This will give some idea of the extent of the *Querelle* and of the material upon which Maître François had to draw. Draw upon it he did; the story of the nuns, in Book Third, Chapter XXXIV., is one of his borrowings from Drusac, for example.

There are a number of other influences and factors which might be found to have a bearing in connection with the Third Book. There was, for one thing, the new Platonism which was being championed by and finding expression in the writings of Marguerite, Queen of Navarre and François I.'s sister; it is the spirit of this movement which animates such a book as Heroët's. There is, too, a certain feminine revolt against love, which may be made out in Marguerite of Navarre's later writings (due to her own disillusioning experiences and her growing Platonic mysticism), and which is given forthright expression in a little known work, the *Angoysses douloureuses* of the Dame Helisenne de Crenne, of which something more is to be said—some commentators have believed that Rabelais' Limousin Student may possibly be a take-off on Dame Helisenne. And finally,—for if woman is attracting so much attention, there is a reason—one has but to glance at the brilliantly constellated feminine firmament of the age.

Lefranc points out that there have

çois Rabelais, *édition critique*, publiée sous la direction de Abel Lefranc, 1913, Tome cinquième, Tiers Livre, pp. 30 et seq., "*Le Tiers Livre de Pantagruel et la Querelle des Femmes*."

always been in France two traditions, existing side by side, with regard to women: the old satiric *gauloise* one, and the idealistic attitude. During the decade from 1530 to 1540, an attempt was made to revive the old chivalric ideal of *courtoisie*, to give it a new meaning and a new life. The movement grew in strength, until cries of alarm began to be raised against it, one of the first of which was that of the Seigneur de Drusac. As to Rabelais' position, there was no doubt; he was looked upon as "one of the most notorious, dangerous and typical enemies of the feminine sex." There had been a hint of this attitude before, in the slighting allusion to Gargamelle's death (Book First, Chapter XXXVII.), in Gargantua's ludicrous mourning for Badebec (Book Second, Chapter III.), etc. If woman appears to be glorified in the Abbey of Thélème, it is for the reason that such a glorification is necessary to Rabelais' picture of an anti-monastic society. On the whole, we may let Lefranc sum it up:

"In reality, this former monk was not a lover of women; he obviously remains faithful to the old *gauloise* tradition . . . with regard to the weaker sex. . . . The Franciscan of Fontenay-le-Comte was always alive in him."

One who would have the "substantive marrow" of Rabelais' view of woman-kind, farcically exaggerated though it may be in such a passage, has but to read Dr. Rondibilis' harangue in Book Third, Chapters XXX. and following, and especially Chapter XXXII., on cuckoldom as "one of the natural appendages of marriage"—"When I speak of woman, I speak of a sex so fragile, so variable, so changeable, so inconstant and so imperfect. . . ."

Rabelais' work, as has been indicated, has other sides. In addition to being a monument to the Renaissance-Humanist thirst for learning and for life (hence all the *soif*, the drinking in its pages), it in a very large degree created the modern French language, providing a rich strain which is constantly crop-

ping out to the present day, whenever the Frenchman forgets for a moment an Academy-imposed *clarté* and has recourse, sometimes instinctive and natural and sometimes, as in Balzac's *Contes drolatiques*, artificial and literary, to the wealth of his linguistic heritage. On the linguistic and the literary side, Rabelais in our own time has had his effect upon a James Joyce.⁶⁰ From all of which, it may be seen that it is only incidentally, in the course of his tumultuous and mountainous work, that he is concerned with the question of sex.

As to the "obscenity" in Rabelais, that, it may be remarked, is a question that would barely have arisen in his own day. While his work may have fallen under the ban of the Sorbonne theological faculty, while it may have been censured by the Calvinists or been frowned upon occasionally by the court, this was due to other, theological reasons; the core of the matter, as Lefranc has brought out, was Rabelais' growing atheism; and as in the case of the Marquis de Sade more than two hundred years later, it was this and not his "immorality" that accounted for any hounding or persecution to which he was subjected.⁶¹

The truth is, Rabelais was not much freer in his language than was the pulpit of the time; and certain of the *prêcheurs libres*, or "free-spoken

⁶⁰ The Rabelais influence, in French writers of the last half-century, is to be seen in the *Ubu Roi* of Alfred Jarry (1888, 1896), in such an after-War writer as Joseph Delteil (especially in certain passages of his *Napoléon*), in the *Barberine des Genets* of Ernest Perochon, and finally, in Louis-Ferdinand Céline's much bruited *Voyage au bout de la nuit*. In the case of James Joyce, the Rabelaisian influence is evident both in vocabulary and in literary technique,—in the employment which the author of *Ulysses* makes of the medieval *fatrasie*; there would seem to be a certain inseparable relation of the *fatrasie* to obscenity, one which, to this writer's knowledge, has not been analyzed.

⁶¹ In this respect, Rabelais would seem to have been in the same boat as his contemporary, Bonaventure des Periers, author of the *Cymbalum Mundi*. See the Lefranc edition, cited in Note 59, Tome troisième, pp. LXI. et seq.

preachers," such as Olivier Maillard, have been seen as his "precursors" in this respect. In any event, the manners of the age were such that John Calvin could address his congregation by the unflattering epithet of "*merdailles*." This is not to speak of a northern French translation of the Bible, made for royal use, in which an idiom wholly Rabelaisian was employed in the rendering of certain Old Testament passages. There are also the sixteenth-century French farces, a collection of which was brought out by the Parisian book-seller, Nicolas Rousset, in 1612. The same freedom of language is to be found in yet other works of the age, dealing with a wide variety of subjects.

Women of the Renaissance

One of the potent factors in bringing the Woman Question into the foreground was the place which women were making for themselves, as they had been doing for a century or so, in literature and at the great and splendid courts of the period. The Queen of Navarre was far from being an exception. The list, indeed, is a long one; and the parts which women played were at times surprisingly active ones.

We have but to think of such names as: Jeanne of Aragon, painted by Raphael and celebrated by the aesthetician Niphus in his *De pulchro et amore*; Vittoria Colonna, Marchesa of Pescara, Michelangelo's enduring innamorata; Diane de Poitiers; Anne Boleyn; Catherine de' Medici; Mary Stuart; Queen Elizabeth; Sir Thomas More's daughters—this, to take in the whole sweep of the period.

Others who may be mentioned are: Petrarch's Tullia; the Nannina of Giovanni de' Medici; Lucia Tornabuoni, mother of Lorenzo the Magnificent; Clarice Orsini, mother of Leo X.; Verona Gambara, intimate friend and correspondent of Vittoria Colonna, whose career in more ways than one resembled that of the Marchesa, and who quite vanquished Charles V. with her

conversation upon the occasion of the Emperor's coronation at Bologna, known also as the patroness of Correggio; Gaspara Stampa, an authentic and widely read poet, variously known as the "new Sappho," the "priestess of Venus," "Cupid's victim," etc., and who, after singing her unhappy love, died a penitent for love; Lucia Bertana of Modena and her friend, Tarquinia Molza, the latter being learned in astronomy and philosophy and the recipient of extraordinary honors (Tasso named a dialogue after her, and the Roman Senate, by solemn decree, conferred upon her a citizenship transferable to her descendants).

There were Laura Ferracina, Claudia della Rovere, Isota Brambati, Silvia Bandinelli, Porzia Malvezzi, Francesca Trivulzio, Bianca and Lucrezia Rangone,—sonorous and empty-sounding names now to all save the period-student, yet names that once spelled glamour for their countrymen and their sex.

Venice, among other cities, was fertile in her daughters. There was Caterina Cornaro, who, an exile with her father, became the bride of Giacomo Lusignano, usurping King of Cyprus, and so, was instrumental in bringing that city under Venetian sway. Following her consort's death, she held a small, brilliant and cultured court at Asola, of which Pietro Bembo was the shining light. There was Cassandra Fedele, who, born at Venice of a learned father, in 1465, early gave signs of the possession of an unusual mind. By her father, she was taught Greek, Latin, history, oratory, philosophy and even theology, her lighter recreations being music, painting and the correspondence which she kept up with the great ones of the day, including Pico della Mirandola, Pontano and Poliziano—see the seventeenth epistle of the last-named writer's third book, where she is given a place among the Muses and is compared with the most celebrated women of antiquity.

Ladies such as these thought nothing of carrying on their correspondence in

Greek. Cassandra corresponded in that language with Leo X., and Alessandra Scala employed the same language in writing to her husband. Both Isabella of Castille and the King of Naples endeavored to lure Cassandra to their courts, but the republic of Venice refused to consent to the departure of one of its most distinguished ornaments. Cassandra was the type of "new woman" who came in with the Renaissance; married to a physician, she took the veil upon her husband's death, and died a Dominican abbess at the age of ninety.

The type was one that was becoming constantly more common throughout Europe. The renown of the Italian court women, such as Isabella d'Este, Isotta da Rimini, Bianca d'Aforza and others, was spreading more and more. Beautiful woman no longer won an admiration for her beauty alone; she must have other gifts to offer. If she had these gifts, illegitimate birth did not stand in her way. A case in point is Tullia of Aragon. Reared rather as a courtesan than as a lady, she possessed a perfect command of both the Latin and the vulgate. She was dancer, singer, poet; and in her *Infinità d'amore* (Infinitude of Love), she gives us a picture of herself conversing with Varchi, Benucci and other erudite acquaintances. Known for her many and facile loves, and of none too savory a reputation from the moral point of view, she is reported to have numbered among her admirers Ippolito de' Medici, Ercole Bentivogli, Filippo Strozzi, Molza, and Manelli.

It was, surely, an Era of Noble Dames; and this feminine resplendence could hardly have failed to leave its imprint upon literature.

Castiglione and His "Courtier"

The effect of all this is to be viewed, in Italy, at the polished little court of Urbino, dropped down in the midst of the Lombard mountains, where beauty and wit each evening gathered about the Lady Elizabetta and the Lady

Emilia to discuss the art of the Perfect Courtier, as related for us by that flower of Renaissance knighthood, Count Baldassar Castiglione. A good portion of the second book of *Il Cortegiano* is taken up with a discussion of the Woman Question,⁶² and we there meet with such passages as: "Without woman, nothing is possible, neither military courage, nor art, nor poetry, nor music, nor philosophy, nor religion; there is no vision of God except through woman."

That "no vision of God except through woman" is an indication of the source of this new attitude toward the sex; and that source is none other than the revived and revived doctrine of Plato. Montaigne may still grudgingly permit women the pursuit of poetry as "an amusement suited to their needs, a frivolous and subtle art, wholly concerned with pleasure and display, as are they themselves"; but the tide for all of that has definitely turned. If man has his doubts, woman has her disillusionments; and a certain Venetian lady, Modesta Pozzo, is to be heard announcing that "With our dowries, it would be better to buy a pig than a husband,"—an extreme view, but an understandable reaction.

The Rise of the New Platonism

It was, not unnaturally, in Italy, the home of the Renaissance, that woman first came into her own. It was out of the Italy of Laura and Beatrice that the Platonic evangel came. It was there that a novel doctrine of love grew up, a doctrine that was to form the basis of a new science of aesthetics. From now on, love and the beautiful were to be associated and amalgamated, as in Niphus' *De Pulchro et Amore*, a work which scholars have looked upon as laying the foundations of modern aesthetic speculation. The treatises on the subject were to multiply. There was Messer Pietro Bembo's *Gli Asolani*, "in

⁶² The French students of the *Querelle* appear to have overlooked Castiglione and the Italians.

which there is discourse of love," with Caterina Cornaro, the Queen of Asola, holding forth learnedly on amorous and Platonic themes; and there were many others in kind. Occasionally, as in the case of the *Di natura d'amore* of Mario Equicola, they did not come off so well; but the intention was there, an intention inspired by the newly resuscitated philosophy of ancient Hellas.

Platonism, revived by the Italian Humanists, had found asylum, in the course of the fifteenth century, at the court of the Medici. Not only Plato, but the Neo-Platonists, were revived, and Plotinus, Iamblichus and Proclus were expounded in that Florentine academy presided over by Marsilio Ficino. By these Humanists, Plato was set over against Aristotle, the god of the later Middle Ages. It is, accordingly, not to be wondered at, if along with the new fashions in dining, fencing and horsemanship, the new manner of thinking and of looking at the world, including the world of women and of love, should have spread upward from the peninsula into France, even before a King of France had degraded himself, as Charles V. put it, by marrying into the shopkeeping Medici. Ficino's *Commentaries* on Plato were translated into French at the beginning of the sixteenth century, and by 1511, Jean Petit was printing the *Disputationes Camaldulenses* of Landini, one of the most distinguished of the Florentine group; in 1518, the first complete translation of Plato appeared, and by that time, Marguerite, Duchess of Alençon, the Queen of Navarre to be, was twenty-six years old.

If so much stress is laid on Plato, it is for the reason that it is to Plato that woman historically owes in no small degree the position which she has achieved for herself. Not that Plato, as we have seen, held an especially high opinion of the sex. None the less, it was the philosophic implications of his doctrine which were to lead to woman's becoming something more than a "silly, light-headed creature" and the "ape of man."

Marguerite of Navarre and the "Prison" of Love

As for Marguerite of Navarre, she became the center of that neo-Platonic literary movement which was an integral part of the French Renaissance. This coterie, as was to be expected, took the idealistic side in the feminine controversy, and the Queen became an ardent spokesman for the cause.⁴³ She was the author of a number of works dealing with the subject of love: *La Distinction du vray amour; La Mort et resurrection d'amour; Réponse à une chanson faite par une Dame*; etc. Her own experiences in love and marriage had been disillusioning; and there is the question, which cannot be gone into here, of the real nature (whether or not she was conscious of it) of her feeling for her brother, François I. Yet, she was one who might say, with the shepherd lass in her own *bergerie*:

*Je ne sens corps, âme ne vie,
Sinon amour, et n'ay envie
De paradis, ni d'enfer craincte
Mais que sans fin je sois estraincte
A mon amy, unye et jointe.*

"I am conscious neither of body, soul nor life without love, and have no desire of paradise nor fear of hell, if only I may be clasped, united and joined to my loved one forever." And again:

*Jamais d'aymer mon cuer ne sera las,
Car Dieu l'a faiet d'une telle nature
Que l'amour luy sert de nourriture.*

"Never shall my heart tire of loving; for God has fashioned it in such a manner that love serves it as nourishment." It was this species of "spiritual libertinism," as he termed it, which had caused the doughty Calvin to reprove Marguerite and to grow cold in his attitude toward her.

⁴³ See Lefranc's "*Marguerite de Navarre et le Platonisme de la Renaissance*," in *Grands écrivains français de la Renaissance*, as well as the same scholar's *Les Idées religieuses de Marguerite de Navarre d'après son oeuvre poétique*, 1898.

Marguerite's *Prisons*, accordingly, are a sort of love's pilgrimage, through all the stages, from the first dream-glow to the shattering of the dream, and in the end, to the realization that all love save the heavenly is vain, and that only in a fervent mingling of human and divine affection,—some such love as that for which the Spanish St. Theresa was to struggle,—is true beatitude to be obtained. This is the point of view which animates the Queen's last poetical works, representing a mingling of the amorous and the religious ecstasy. *Les Prisons*, in the meanwhile, is a production that has the ring of experience, of having been lived through; it is, one might say, a fragrant blend of the *Divina Commedia* and the *Roman de la Rose*; it is Marguerite's *Grand Testament*.

Her first "prison" had been a shimmering "*tour d'amour*," a sun-flooded dungeon of love:

*O belle tour, ô paradis plaisant,
O clair palais du soleil reluisant,
Où tout plaisir voit en un regard! . . .
Pour vivre heureux tout royaume et empire:
C'est sûreté d'amour traye et loyalle,
Qui vault trop mieux que la gloire royalle.*

Such was the Queen's conception of the happiness which should accompany true love, that happiness which she had expected to find, and had failed to find, with Henri of Navarre.

It needs little analysis to reveal the fact that Marguerite's view of love is an admixture of Platonism and Christianity, of a sort that is to be encountered in other poets and writers of the period, who were members of her intimate circle, such as Sainte-Marthe, Heroët, etc. Marguerite's approach to Platonism had been through religion, and in particular, through the early influence of Lefèvre d'Étaples, that great precursor of the Reformation, whose concern was the reconciling of Plato and St. Paul. Another who had a large share in the molding of her thought was Briçonnet, Bishop of Meaux, as is brought out in the mystically jumbled

correspondence between the good bishop and the princess. Not to be forgotten, either, is the influence of that "spiritual geometer" of the end of the fifteenth century, Nicholas of Cusa. The author of the *De Deo abscondito* and the *De visione Dei* may have been an intellectual mystic; but he has his more emotional side, as when he tells us that "the heart only really lives when it loves"; and it is worthy of note that an edition of Cusanus was brought out by Lefèvre d'Étaples, in 1509, under the patronage of the Bishop of Meaux.

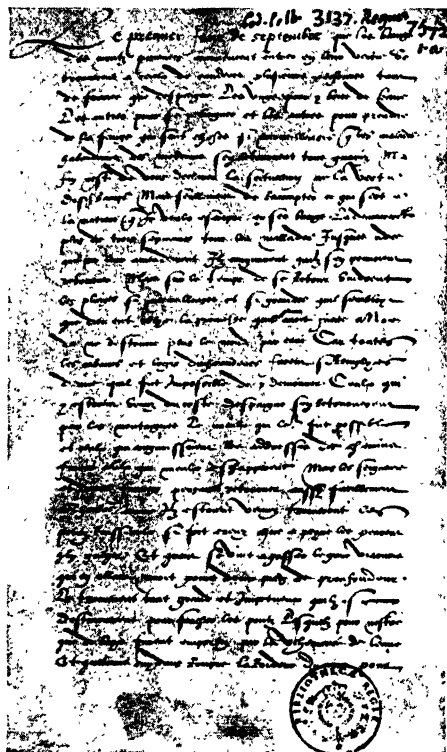
Marguerite, it may be seen, was in the full tide of the Platonic stream. Her own views were to take definitive literary form later in life, when (some time after 1546) she came to read the French translation of Ficino's *Commentaries* on Plato. The germ, however, had been developing over a number of years, and was well on the way to efflorescence when Marguerite married Henri. The latter, a full-blooded man's man, was looking for something other than Platonic affection, and the result was disillusionment on both sides.

Marguerite's interests are reflected in a fashionable literary game of the day which she did not disdain to play, and which consisted in carrying on a Platonic flirtation in verse. Our record of this is a manuscript preserved in the Bibliothèque Nationale. The Queen's correspondent was Claude de Bombelles, Seigneur de Lavau, an important personage at the court of France. Verse-making of this sort was a courtiers' fad; and so, in response to *Douze huictains faicts par Monsieur La Vaulx*, we have *Douze huictains faicts par la Royne de Navarre répondans a ceulx de monsieur La Vaulx précédens*. The verses, by either hand, are of the most conventional sort, too conventional to bear quotation, and the affair is by no means to be taken seriously, save in so far as it has some light to shed upon the trend of the Queen of Navarre's mind. Love to the latter was a "prison," which she was always seeking, but which became

ever more and more an intellectual-mystic one.

**The Heptameron and the Quest for the
"Perfect Lover"**

The *Heptameron* is, it must be admitted, not precisely the sort of thing one would expect from the pen of a woman. We should not, ordinarily, look for a woman as the author of a



MANUSCRIPT PAGE OF *The Heptameron* OF MARGUERITE OF NAVARRE (Bibliothèque Nationale)

Pantagruel, any more than we should anticipate a feminine *Satyricon*, or even a sentimentality-washed *Fanny Hill*. This, experience teaches, is not the way the mind of the sex ordinarily turns; and in the case of the delicate-minded Queen of Navarre,—to one who is familiar with her character and its development and her thinking as revealed in her other works,—it comes with an especial shock.

There are, as a matter of fact, two Marguerites in the gaze of posterity: the shadowy lady who wrote the *Heptameron*, a dimly outlined Bawdy Queen, author of a work to be retailed today under the bookseller's shelf; and a Queen who was a poet, scholar, letter-writer, patroness of the arts, one who, through the aid she lent to the introduction of Platonism into France, was in large measure responsible, as Prof. Lefranc assures us, for the bringing about of the French Renaissance. This latter Marguerite is the Marguerite of the student, as the latter is the property of the too frequently unoriented collector of "curiosa."

It is not surprising, in view of all this, if we hear a maidenly Victorian (British) biographer of the Queen of Navarre reproaching the latter for having written the *Heptameron*, while so broad-minded a scholar as the late Marty-Laveaux, the distinguished Rabelais editor, is extremely severe in his judgment (chiefly literary) of her work.

From what has been said, it should be obvious that it is impossible to judge the *Heptameron* purely as an erotic work. It is not to be understood without an understanding of Marguerite's Platonism on the one hand, her relations to her brother, and their relations at this particular period, on the other. It may be well, accordingly, to look first at the circumstances surrounding the composition of the tales, and then at the treatment of the theme of love which we find in them.

Marguerite, François and their mother, Louise of Savoy, had always constituted a close "trinity,"—"our Trinity," they were in the habit of calling it. This "trinity" had now been broken by the death of Louise; François, exhausted by his debaucheries, was in reality slowly dying, the aspect of the external world, the political map of Europe, was changing, and brother and sister were drawn closer together than ever. They had always been very close, and Marguerite's reactions toward her

brother had at times been so strong and so ardent as to raise the cloud of suspicion, in all probability, an utterly unjustified one.

An instance of this is a certain letter, followed by a poem, which she sent him, urging him to come and visit her, and ending with the admonition to "bury my letter in the fire, and these my words in silence," a letter identified as the Queen's, which was discovered in the last century, with the signature cut off. Marguerite had signed herself "Your very humble and most obedient more than subject and servant." There are, too, in her poems, passages addressed to François which are unusual in their warmth, coming from a sister (e.g., the one ending with the refrain, "*Ce n'est qu'un cœur!*")⁶⁴ It must, however, be pointed out that in Marguerite's case, one is altogether more than likely to be misled by the mystic-Platonic amorous-religious phraseology. On the other hand, there is Marguerite's extreme and touching devotion to her royal brother during his Spanish captivity; but in this, she can hardly be said to have exceeded the bonds of a deep and self-sacrificing sisterly devotion.

The point that interests us here is, that when François, with the end approaching, found life hanging heavy on his hands, and when, owing to his sapped and failing health, his passion for the chase no longer stood him in stead, it was to his sister that he turned

⁶⁴ Or such an effusion as:

*Vostre soeur? Las! grande amytié!
Or fendez vous, mon cocur, par la moytié
Et faictes place à ce frere tant doux,
Et que luy seul soit enfermé en vous.
Gardez, mon coeur, mon frère, mon amy,
Et n'y laissez entrer vostre ennemy.*

While François himself, in the days of his captivity, had written:

*La soeur de veue tant désirée,
Que de nous se peult dire l'aymée,
Parfaitement, si jamais créature
Le merita par sens, et par nature.*

"They were knitted together," says Sainte-Marthe, "in so close and tight a bond of love that, neither within the memory of our forebears nor within our own, has the like of it ever been heard of."

for amusement and alleviation of his boredom. Amorous to the last, in mind when he could no longer be in the flesh, François liked a spicy tale. It was this, according to the legend, which led Marguerite to begin reading him Boccaccio's *Decameron*, a work with which brother and sister had been familiar in their youth. François, indeed, knew his Boccaccio too well, and soon began to tire of the old plots; and it was then that Marguerite had recourse to inventions of her own, and started telling those "true" stories which were to crystallize into her *Heptameron*.

Such an explanation as the foregoing seems, at any-rate, not unpalatable, from the subject-matter and the structure of the tales themselves; the influence of Boccaccio is evident. The Queen proceeded to picture a company of ladies and gentlemen who, having paid a visit to the Canterets baths in the Pyrenees, were stopped for ten days upon their return journey by a swelling of the river; there are ten in the company, and each in turn is to tell a story a day; the result, in other words, is to be another *Decameron*, but for some reason which we do not know, the total number of the tales remained at seventy, and the work became a *Heptameron*.

It has been frequently asserted that the stories in the *Heptameron* are, doubtless, not all of Marguerite's composition, and this may be true; it may be that the Queen was given a hand by one of the men of letters at her court, by Bonaventure des Périers and others. The work as a whole, nevertheless, bears her unmistakable imprint, as is evident upon ever so slight an inspection; there is a marked relationship between the *Heptameron* and Marguerite's other writings, and there is an even stronger connection between it and those interests with which we know that she was preoccupied during the last decade of her life.

Brantôme, whose grandmother was the Queen's companion and secretary,⁶⁵

⁶⁵ Louise de Daillon, Sénéchale de Poitou.

tells us that the tales were written, many of them, by Marguerite in her litter, and that the other court ladies strove in vain to imitate them. Scholarly evidence points to the fact that the stories were not composed before the year 1538 nor later than the year 1542, the approximate date of their composition being 1541, which is to say, they date from six to seven years prior to François' death; this goes to strengthen the tradition that they were invented for the King's amusement in his declining days.

The model, as has been said, was clearly Boccaccio, Marguerite taking the formula and applying it to real-life personages and events, with which François was acquainted, and which for that reason held his interest. In the work are to be found among other incidents, thinly veiled accounts of the King's own exploits and various court escapades. The character of the moralizing Parlemente is undoubtedly Marguerite herself, and the others may be similarly identified with known individuals. The realistic elements may have interfered with the story-teller's art, but they rendered the result more palatable to the chief audience, François I. The *Decameron* was not the only work that Marguerite drew upon; she was familiar with the Italian *novellieri* in general, and there are traces of the influence of Poggio, Masuccio, Bandello and others. Boccaccio, however, remains her principal inspiration.⁶⁶

What indicates Marguerite's hand more unmistakably than anything else is the Platonism with which the *Heptameron* is permeated, the view of love that is there set forth. Whatever the artistic demerits of the whole may be, —Sainte-Beuve, for one, finds the tales devoid of charm and composition,—there are a number of fine pages to be encountered on perfect love and the perfect lover, in which a purified and rarified form of the passion is exalted, with

a stress on woman's being the equal rather than the sensual plaything of man.

The aim is "to reconcile Christian aspirations with the teachings of ancient philosophy (the Lefèvre d'Étaples-Bishop of Meaux influence), and with this object, each *nouvelle* at the end is brought up on the higher plane by Dagoucin, who in life was none other than Marguerite's spiritual adviser; his views on love will be found set forth at length in such a passage as the Epilogue to the Eighth Tale.⁶⁷ Marguerite, in short, in giving her brother the spicy narratives which he craved, was playing something of a trick upon him, and incidentally, was salving her conscience and saving her face.

The author has been severely criticized upon occasion for the "free" character of the *Heptameron* stories; yet even a critic like Sainte-Beuve, who can see no artistic performance, absolves her of indecent intent; once again, it is a question of the manners of an age. The thing that Marguerite did was to make of the *conte* a method for the notation and the description of human passions; she had discovered for herself a sort of pure Racinian passion of the soul. M. Lanson, the historian of French literature, observes that she tapped the wellsprings of lyricism in personal emotion, found the principle of nobility and of beauty in a certain spontaneity of impression, and by so doing, broke that line which runs from the *fabliaux* to Voltaire. In any case, her tales were adapted to the purpose for which they were intended, that of entertaining a worn out *roué* of a King in the last stages of a gruesome malady.

The *Heptameron* was not published until 1559, ten years after the author's death. The year before, a pirated and mangled edition by Pierre Boaistuau had appeared, under the title of *Histoire des amans fortunéz*, and this had spurred on Marguerite's daughter,

⁶⁶ Le Maçon dedicated to Marguerite his French translation of the *Decameron*.

⁶⁷ Cf. the epilogues to the thirty-fourth and fifty-third *nouvelles*.

Jeanne d'Albret, to hasten the publication of the authentic work.

Dame Helisenne and the "Cry of the Heart"

The Queen of Navarre was not the first to "tap the springs of emotion," if we are to credit so eminent an authority as Prof. Lefranc. According to the latter, the true feminine-emotional note is first to be made out in a work by a woman whose name is now known only to scholars, and which was published at Paris, in 1538, some three years before the probable date of composition of the *Heptameron*. The work in question is *Les Angoysses douloureuses qui procèdent d'amours, contenant très parties composées par dame Helisenne de Crenne, laquelle exhorte toutes personnes à ne suyvre folle amour*.

The Dame Helisenne, or Helisaine, who was of Picardy, appears to have excited the risibilities of her contemporaries; and a number of Rabelais' commentators, including Pasquier, shared this view, and saw in her the original of the Limousin Student. This young lady had translated into French the first four books of the *Aeneid*, dedicating her version to François I. The *Angoysses douloureuses* were supposed to be autobiographical, and the Lady of Crenne was the author, as well, of a collection of letters and other pieces, all of which, according to the Abbé de Marsy, did read very much like the Limousin's speeches.

But modern scholarship has tended to rectify our view of Helisenne, and Lefranc, after quoting Michelet's "The true Renaissance is the renaissance of the heart," goes on to characterize the product of Dame Helisenne's pen as a book containing "the first cries of the heart and the language of true passion." For the point lies in that exhortation, "*à ne suyvre folle amour*";⁶⁸ here is a definite revolt against the suffering that love imposes, another and closer anticipation of Madame de La Fayette. For

⁶⁸ It is interesting to compare the "*loco amor*" of Juan Ruiz (note 29, above).

this reason, whatever its literary style may be, the *Angoysses* possess an historical importance.

The Sexual Cynicism of the Sixteenth-Century Italians

While Rabelais in France is giving vent, on sexual subjects, to a deep-belly laugh, a resounding guffaw, and while Marguerite of Navarre and the other Neo-Platonizers are engaged in poeticizing the passion of love to a point where it evaporates in mystifying clouds of words, it is interesting to turn to the Italians of the same period, and to note the complete sexual cynicism which they are displaying, in the same age that produced a Castiglione. A reaction would seem to have set in against the latter's idealized view, in the land that gave birth to the New Platonism. This reaction is to be seen at its height in the *Sonetti lussuriosi* and the *Ragionamenti* of Pietro Aretino, as well as in such a work as the *Cazzaria* of Arsiccio Intronato.

Pietro Aretino, on the Prostitute and the World

Aretino, "Scourge of Princes," Prince of Blackmailers, has an importance from a number of points of view, as an early literary realist, as an art critic (incidentally) and as a pioneer publicist. The Aretino of the Pasquinades and of the *Letters* may, without exaggeration, be termed the founder of modern journalism. He himself was supremely immoral or unmoral. While he pictured the vices of his age, he hardly can be said to have flayed them, unless it be in his play, *La Cortigiana*, in which he satirizes the vices of that papal "golden age" which centered about Leo X. The *Sonnets*, the *Dialogues* and the *Courtezan* have been described by Aretino's modern British biographer, Edward Hutton, as "terrible Medusa works"; and terrible they are, the *Sonnets* and the *Dialogues* in particular, in their coldly cynical attitude toward vice and all matters of sex.

The *Sonetti* were given additional fame—and cynicism—by the sixteen engravings of Marcantonio Raimondi, after the drawings of Giulio Romano, each of which depicted a different *modus sexualis*. It was these which led to the scandal that the *Sonnets* produced. Aretino, according to his own version, was led to write the verses upon seeing the engravings. The Rome of Pope Clement was shocked, Marcantonio was thrown into prison, and Giulio's reputation, a splendid one theretofore, was shadowed. Aretino interceded with the Holy Father and procured Raimondi's release. In one of his letters, Aretino speaks of dedicating his *Sonnets* to "the hypocrites, out of patience with their villainous judgment and with the hog-gish custom that forbids the eyes what most delights them"; and he exclaims in conclusion, "The beasts are freer than we!"

In his *Dialogues*, Aretino gives a vitriolic picture of the life of his time, a picture focusing on the life of women. After portraying the life of nuns, the life of married women, and the life of courtezans, he comes to the bitterly satiric conclusion that the courtesan's life is the best and most honorable one, and we hear his Antonia advising Nanna to make her daughter a prostitute; read what Antonia has to say about "the best profession." (It is of interest here to compare Bernard Shaw's "Unpleasant" plays.)

In the Introduction to his edition of the *Ragionamenti*, Aristide Raimondi, a modern Italian critic, says: "His (Aretino's) men and women have but one obsession: Coitus. Beyond this, nothing. Absorbed in this, monks and nuns, women of every sort and men of every kind drag out their lives in a crudely refracted light of day that uncovers every nudity, every ugliness. All about this throng, the desert; and this is the manner in which Aretino interprets life." Nanna says it all, when she declares: "The world is in ruins. Everything is going headlong. There is no faith, divine or earthly, no faith

among the brides of Christ, or those who are supposed to give faith to men. I prefer my liberty. I am free, but I am loyal. I live with an uncovered countenance. I sell openly my merchandise, while others pretend and simulate; not I."

The Italian critic goes on to remark that Aretino himself "is a prostitute." Pietro does have the prostitute's instinct of an anarchic social rebellion. "All is obscene and libidinous, everything is for sale, everything is false, nothing is sacred. . . . Here is a lust, here is an obscenity, unbridled but profoundly human . . . which ought to render these *Dialogues* preferable to the hypocrisy of so many . . . modern narrators. . . . Such is this book, all impulse and vulgarity, poetry and sarcasm . . . it 'speaks as life speaks,' with its own cruel logic and contradictions."

It is to be noted that the *Ragionamenti* were written at the same time as Aretino's hypocritical and designing religious works. Originally inspired, no doubt, by the Greek Lucian, they furnished the model for certain of the obscene productions of the seventeenth and eighteenth centuries.

All in all, however, Aretino's direct influence has been small, even upon Italian writers. It was more felt in France than in his own country. Rabelais owes him something, as does Molière in his *Tartuffe*. Crossing the Channel, it is hard to say just how direct Shakespeare's indirect debt was, but Aretino's Marescalco would appear to have been the antecedent of Malvolio, though he cannot compare with the Elizabethan character in full-flavored richness. The Venice of Pietro, in any event, was the Venice of Shakespeare's early plays, from whatever source the latter got them.

Otherwise, Aretino's influence in English has been all but negligible. Sir Thomas Wyatt, in his *Penitential Psalms*, in part translated from and in part imitated the *Sette Psalmi*. We also find Thomas Nash referred to by Lodge as "the true English Aretino";

this was due largely to Nash's employment of the vernacular for comic effect and to his penchant for the coining of "boisterous" words from other languages; aside from this, there is not a great deal in common between the two. But references to Aretino in the British sixteenth century are fairly numerous; a number of them will be found in Gabriel Harvey's *Marginalia*.⁶⁹

There is one work, *La Puttana errante, or The Wandering Whore*, which was wrongly attributed to Aretino in the past. It is now known to have been written by Lorenzo Veniero, or some other, and dedicated to Aretino, who sponsored it. An inspection of its style shows that it is not Aretino's.⁷⁰

The Intronati, "Academicians" of Sex

There is a certain sixteenth-century Italian erotic item that is little if at all known to erotica collectors, but which deserves to be, and that is *La Cazzaria* of Arsiccio Intronato. The editions of *La Cazzaria* have always been rare, four or five in all being known, the original one having appeared in 1530. In 1863, "Bibliophile Jacob" (Paul Lacroix) published an edition of the Italian text, with an extensive introduction in French.⁷¹

⁶⁹ Published under the editorship of G. C. Moore Smith, 1913.

⁷⁰ As for English translations of Aretino, there was *The Crafty Whore*, published at London, in 1658, and partly taken from the *Ragionamenti*. A six-volume edition of the *Dialogues* was brought out by Isidore Liseux, at Paris, in 1889. There are also current, with the under-counter bookseller, certain versions of the *Sonetti lussuriosi*, one of them purporting to be "by an English poet," and rumored to be from the pen of Oscar Wilde, but the slightest inspection would convince any one that Wilde had nothing to do with it—the verses are not good enough. And lastly, there is the translation of the *Ragionamenti* (extracts), *La Cortigiana*, and selections from the Letters, with a paraphrase of the Sonnets, by the present writer: *The Works of Aretino, translated into English from the original Italian, with a critical and biographical essay*, by Samuel Putnam, illustrations by Marquis de Bayros, 1926, 2 vols.

⁷¹ The title page has, simply: *La Cazzaria, Cosmopoli, MDCCCLXIII.*; but the editorship

At the time that *La Cazzaria* was produced, academies were the fashion of the day in Italy. There were academies on all sides, of every sort, for the discussion of practically every subject under the sun. These were often semi-serious, semi-jocular institutions, and were in the habit of decking themselves out with the most ludicrous names. Prominent among them was the Academy of the *Intronati*, or "Dunderpates," of which Antonio Vignali di Buonagiunta (or Buonagiunti), a native of Sienna, was the founder. A man of wide learning and with the respect of the scholars of his age, Buonagiunta took upon himself the "academic" name of Arsiccio.⁷² It was on the subject of sex,—everything remotely having to do with the subject,—that the *Intronati* expended their lucubrations.

As for *La Cazzaria*, it is an humorously erudite discussion between the founder, Arsiccio, and one of the members whose academy name was Sodo, and who in real life was Marc-Antonio Piccolomini. The work in the original is not lacking in literary quality and style, but in any English translation, it

is undoubtedly Lacroix'. Opposite the title-page, one reads: "*Cette réimpression, faite par les soins et aux frais d'une réunion de bibliophiles, n'est point destinée au commerce. —Elle n'a été tirée qu'à 100 exemplaires numérotés, dont 90 sur papier vergé et 10 sur papier de Hollande.*" The copy which the present writer possesses is numbered 73 and is bound in the back of a copy of Bibliophile Jacob's edition of the *Moyen de Parvenir*, published by Charpentier at Paris, in 1868; the printing of *La Cazzaria* was done at Brussels, Imprimerie de J. H. Briard, rue aux Laines, 4. Lacroix gives a detailed bibliography of the work, stating that only four editions are known, the first being at Naples, without date but about 1530, "*ad instantia(m) di Curtio et Scipione Navi*," and extremely rare.—There is a verse imitation of *La Cazzaria*, published in the eighteenth century, under the title of *Il libro del perchè*; and in the *Priapea* of Nicolò Franco, there is a satiric sonnet relative to the work and its author. A comedy of Arsiccio's, *La Floria*, and a collection of letters, *Alcune lettere amorose*, are also known.

⁷² Meaning, literally, the "burnt," the "broiled," the "roasted."

would be entirely too crude and bald,—unless, possibly, one were to do it in an imitation of Sir Thomas Urquhart's swaggering seventeenth-century idiom. The theme is sexual intercourse and all its accompaniments and accessories, and the point of view is decidedly a perverse one, the author being obviously more interested in male youths and sodomy than in relations between the sexes.

While the work has its humor, slightly more, and of a less strained, more Rabelaisian-fantastic character, than is to be found in Aretino, its tone on the whole is a hardened, cynical one; and it is not surprising that the Academy was finally suppressed.⁷³

Aretino and the Erotica Trade in France

The trade in erotica seems to have flourished down the ages. We have seen the business that Secundus, the freedman, did in Martial and other lascivious writers of the time. In France, about the middle of the sixteenth century or a trifle later, we find it being lucratively plied by a certain Venetian bookseller at Paris, known as Messer Bernardo, "a relative," Brantôme informs us, "of the great Aldus Manucius of Venice." Messer Bernardo kept shop in the rue de Saint-Jacques, and his chief stock-in-trade appears to have been Aretino's *Sonnets* with Raimondi's engravings, "*de omnibus Veneris schematibus*." This Bernardo, Brantôme continues, "told me and swore to me once that in less than a year he had sold more than fifty sets of the works of Aretino to married and unmarried people, and to women, of whom he named to me three who are great in the world, whom I shall not name, and he sent those works to them, very well bound, under solemn oath that not a word was to be said of the matter."

The buyers for these wares were plentiful; and so respectable a citizen as

Pierre de l'Étoile notes in his *Journaux*: "On Tuesday, the 19th of August, 1608, I bought for 60 sous some little portraitures and new Figures of Aretino, made by Tempeste at Rome, villainous, filthy and immodest beyond measure, which commonly pass here under the name of the Loves of the Gods. There were fourteen of them, which everybody found well made, although there can be no such thing as good where evil is concerned, and I have changed them . . . with great regret, since I take them as an indication of the virtue of this immodest century."

The poets of the period vied with the painters in the matter of license, and their *salauderies* and *fadaises* were collected in volumes with suggestive titles, *La Muse folâtre*, *Muses gaillardes*, *Cabinet satyrique*, etc. Éstoile and others like him eagerly collected these, too. Then as today, however, the censorship worked by fits and starts, and a book would be pounced upon where one would have least expected it. This was what happened to Sanchez' Latin treatise, *De matrimonio*, put on the index by the French Parliament in 1607, after it had been discovered that the Jesuit author, at the end of his tome, as Éstoile describes it, "treats exquisitely of that fine art of sodomy, but so villainously and so abominably that the very paper on which I write blushes; moreover, he is a man who appears to have greatly practiced the trade." This, coming from a Jesuit, was too much, and the book was suppressed; for the Jesuits were closely watched for teachings dangerous to morality. Éstoile bought a copy, parchment-bound, for eight francs, "because I love the Jesuits, not because the subject pleases me," he sarcastically observes.

Paris was not the only city where the trade flourished; Rouen, Lyons, Poitiers and other places were close rivals. Works of this sort were sold on the streets and carried by peddlers into the provinces.

It has been believed, not without rea-

⁷³ It was dissolved in 1568. It was reopened, and an attempt was made to revive its former brilliancy, in 1603; but the life of the fanciful institution was spent.

son, that Raimondi's original plates may have been brought to France, some time after the reign of François I., and that they were in Bernardo's possession about the year 1580. Bernardo (Bernardo Torresano, or Turizan) might have had them from Aretino's publisher, the son of the great Aldus Manucius; for it seems likely that the plates would have been sent to Venice when the scandal broke at Rome. In France, there were, especially in the seventeenth century, severe laws governing bookshops, and the plates would have had to be kept hidden away. They are said to have been finally destroyed by a conscientious print-merchant by the name of Jollain, who, so runs the tale, bought them for a hundred crowns for that express purpose.

Ever since the beginning of the Reformation, the Church had been engaged in a warfare on forbidden books, but more particularly those that were theologically shady. Not infrequently, the moral works of the clergy, attacking the immoral ones, were quite as obscene in character as their targets. An instance here is the *Somme des Péchés et le Remède d'Œœur* (Lyons, 1581) of the friar, Jean Benedicti, who appears to have been thoroughly versed in Aretino. On the other hand, the Popes were sometimes startlingly severe, as when Sixtus V. had a cardinal's secretary by the name of Capella hanged for having perpetrated an obscene painting. It was during the reign of François I. that erotic paintings and engravings began to enjoy a vogue in France. They brought a high figure; an illuminated Aretino, for example, was priced at from eight to nine hundred crowns.

Brantôme and the "Cour des Dames"

For the period here under consideration, an indispensable source-book, needless to say, is the *Dames Galantes* of Brantôme, filled with the "bons mots" of the great ladies ("grandes et honnêtes dames") of François' court, that "grande cour des dames" which the

garrulous old chronicler, one of the most indefatigable gossips in all literature, so adored. Brantôme's "contes," collected, he assures us, "at great pain" (*avecques grande peine*), were, understandably, withheld from any but friendly gaze during his lifetime, and were left by will to his niece, the Comtesse de Durtal, to be published after his death. It is significant that he starts out with an account of the great cuckolds of the sixteenth century. His work makes delightful reading to-day, and lives by its literary merit as well as for its historical value. From the latter point of view, we may take for reading at the same time Sauval's account of the Loves of the Kings of France (*Mémoires historiques concernant les amours des rois de France*), published in 1739.

The Age of Catherine de Medici

Passing rapidly over such a poet as Clément Marot and such a work as the *Légende* of Pierre Faifeu (1531), affording many sidelights on the profligate manners of the epoch, we may go on to what is commonly known as the Age of Catherine de Medici, which may be taken as including the reigns of her three sons, François II., Charles IX., and Henri III. Here, there are a number of works which, while not belonging properly to the field of erotic literature, will serve to paint in the background; among them may be mentioned: Henri Estienne's *Discours merveilleux de la vie de Catherine de Medici*; Pierre l'Estoile's *Journal de Henri III.*; etc. There are also a number of minor works which afford a picture of prostitution at the end of the sixteenth century, such as the *Enfer de la Mère Cardine*; ⁷⁴ and a fine poet like Joachim

⁷⁴ La Mère Cardine, a brothel-keeper, was a notorious character, and, about 1570, inspired a number of verse satires. The *Enfer de la Mère Cardine*, which appeared without date or place of publication, must have been printed at Paris, in 1570 or thereabouts, and was reprinted in 1583 and 1597. It was attributed to Flaminio de Birague, nephew of the Chancellor of France. In the reprints, there are

du Bellay, in his well known "*La Maquerelle, ou la vielle courtisane de Rome*" (also sometimes known as "*La Courtisane repentie*"), adds to our knowledge of that society in which prelates and courtizans mingled.

Not to be overlooked, either, is the curious *Cabinet du Roy de France*, etc., published in 1581, and which has been attributed to Nicolas Froumenteau; this book presents an amazing statistical table, showing the "general state of sacred polygamy, by dioceses, in 1581," etc. For Henri III. and his "*mignons*," there is *Les Hermaphrodites*, published at Paris about the year 1604. And for Henri IV., and his scandalous divorce from Marguerite of Valois, we may refer to the *Divorce satyrique* of Agrippa D'Aubigné, to the same writer's *Confession de Sancy*, and his *Histoire universelle depuis 1550 jusqu'en 1601*, to the Princess de Conti's *Amours du Grand Alcandre*, written to complete the *Mémoires* of Marguerite of Valois, etc., etc. All this should help us to understand a society of the sort that is pictured in Béroalde de Verville's *Le Moyen de Parvenir*.

The *Moyen de Parvenir*: Rabelais Purloined?

Published anonymously in 1609-10, the *Moyen de Parvenir* aroused a great to-do over authorship. Béroalde de Verville, son of a distinguished scholar who was an adherent of the Reformation, took the credit for it, and in a subsequent work (*Le palais des curieux*), he states in so many words that he is its author. His contemporaries, however, pointed out that it was quite too good to have come from his pen; for Béroalde was the author of numerous romances, including a series entitled *Les Aventures de Floride*, the fifth portion of which, *Le cabinet de Minerve*, cast in the same dialogue form as the *Moyen de Parvenir*, is in itself an erotic item.

certain verse additions. There were a number of pieces treating of a similar theme which appeared following the suppression of legal prostitution in 1560; see Lacroix, *op. cit.*, Part III., Chapter XXXIV.

The quarrel came down to the nineteenth century, when we find Charles Nodier attributing the work to Henri Estienne, author of the Reformationist *Apologie pour Hérodote*,—an obviously ridiculous attribution, for more reasons than one. As for "Bibliophile Jacob" (Lacroix), he believes that the production represents a working over on Béroalde's part of certain of Rabelais' papers which were in private circulation, but which were not published, during the Maître's lifetime.

However this may be, the *Moyen* is a work with the real Rabelaisian verve and gusto, and with all of Rabelais' freedom of language. There is no plot, no plan and no conclusion to the book; the whole is a *fatrasie*, in Rabelais' own manner. Characters from various periods of history are brought together and joined in conversation at an imaginary banquet, and the result is hilarious in the extreme. The *Moyen de Parvenir* is of high literary quality, and is to be put on the Rabelaisian shelf, very close to the authentic works of the Maître. Although the authors of obscene or irreverent publications were frequently prosecuted at this period, Béroalde, though he might have been held on either score, was not molested.

Regnier and the "Satirists" of Vice

It is Mathurin Regnier, a poet-cleric, who does for the early seventeenth century what Villon did for the fifteenth century, by giving us, in his *Satires*,⁷⁵ a panorama of prostitution under Henri IV. In the violence of his temperament, Regnier suggests the latter-eighteenth-century Rétif de la Bretonne; he is also reminiscent at times of the Greek and Latin erotics; his portrait of the courtesan Macette, a female Tartuffe, remains a classic in kind. Boileau, in his *Art poétique*, admits that Regnier's verses are "filled with verve and spice," but laments that the poet "often takes his

⁷⁵ "The very term, satire," observes M. Violet-le-Duc, in his *Histoire de la satire en France*, "indicated an obscene work."

muse to the brothel," and is "frequently alarming to modest ears."

Another "satirist" of the time is Claude d'Ésternod (or Desternod), better known as the Sire d'Ésternod, author of the *Espadon satyrique*, published at Lyon, in 1619. D'Ésternod took Regnier for his literary model, and appears to have led much the same sort of life. He had been a soldier, and had a soldier's brutal frankness.

Thomas de Courval-Sonnet, another satirist, was by origin a squire of Brie in Normandy, and later became a physician. He is hard on women in general, especially in his *Satire VI.*, bearing the title, "*Censure des femmes.*" which incidentally cannot compare to Boileau's piece on the same subject. His work is marred by overstress and too heavy a laying-on of colors. He did not hesitate to dedicate it to the queen-mother, Marie de Medici. His *Exercices de ce temps* ran through a number of editions.

With the Sire d'Ésternod and Courval-Sonnet, the poetry of prostitution, veiled as satire, reached a limit of outspokenness and unrestraint. A reaction, it would have seemed, was about due. That reaction was soon to come, in 1623, in the first literary obscenity trial in history.

The Trial of Théophile Viaud; Beginning of Anti-Obscenity Legislation

The modern censorship of books on grounds of obscenity really dates from the bringing to trial, in 1623, of the poet Théophile Viaud, in connection with the publication of a verse compilation entitled *Le Parnasse des poètes satyriques, ou Recueil des vers gailards et satyriques de nostre temps*. The case was one that involved other factors, notably a bitter quarrel between Théophile and the French Jesuits, one Père Garasse in particular.

The poet maintained that various pieces bearing his signature had been inserted without his knowledge or consent in the collection which included verses by a canon of the Church (Mottin) and the governor of Le Havre

(Sigognes), as well as by Regnier and others. The strange part is that similar compilations had been put out in 1617, 1618 and 1620, not only without interference, but with a royal permission in the case of the first two editions. Théophile had been sentenced to temporary banishment, but this had been due to his mode of life rather than his writings.

It was the controversy with the Jesuits which precipitated the thing. The copies were seized, the bookseller imprisoned, and the destruction of the work ordered; but a number of copies were rescued and clandestinely circulated. The bookseller had declared that Théophile was not blameless, and Parliament then took up the affair. The grave accusation of atheism was now brought against the author, who sought safety in flight. On August 19, 1623, sentence was rendered against Théophile and three other authors. Berthelot, Colletet and Frenicle; and Viaud and Berthelot were condemned to the stake, while all copies of the *Parnasse* were likewise to be burned. In addition, four book-dealers were to be taken into custody.

Viaud, being in hiding, was burned in effigy. When he attempted to flee across the frontier, he was apprehended, brought back, and lodged in the Conciergerie, and was afterwards locked up in the dungeon of Ravillae for a year and a half while waiting for Parliament to review his case. The booksellers, meanwhile, had succeeded in getting out of it somehow or other. Théophile put up a vigorous defense, and found other writers to take his side in print. He finally absolved himself sufficiently to be able to get off with a sentence of banishment from the capital. He died a few months later, as a result, it is said, of his captivity.

The case, to repeat, is important for its bearing on jurisprudence; it established a precedent; and Louis XIV. will soon be burning at the stake a "satirist" by the name of Louis Petit. The censorship has begun, and it is to continue

down through such celebrated cases as Gautier's *Mademoiselle de Maupin*, Flaubert's *Madame Bovary*, Baudelaire's *Fleurs du mal*, to our own time and *The Well of Loneliness*, Joyce's *Ulysses*, etc. Moreover, the outlawed book from now on is to become a commodity in itself, and a profitable one to the dealer.⁷⁰

Shakespeare and Puck's Lotion; the "Dark Lady"

Meanwhile, across the Channel, Shakespeare's mischievous imp, Puck, is soon to be squeezing upon Titania's lids the magic juice that will render the Queen, when she awakes, in love with Bottom, the ass. While Shakespeare owes his romanticism in no small part to sources ultimately Italian, it is to be noticed that there is in him, evident in so light and airy a comedy as *A Midsummer Night's Dream*, an evolving view of love that is already beginning to take on the hue of his century, the sober seventeenth. Love, in Shakespeare, is an enchantment, almost musical in nature and effect—"If music be the food of love, play on—" In his comedies, the Bard gives it a certain elfin or fanciful transformation; but this need not blind us to its real character, to the fact that it is an anticipation of Stendhal's "crystallization." On the more personal, biographic side, there is the as yet unsolved problem of the Dark Lady of the Sonnets; but from the point of view in this paper, Puck's lotion has a good deal more to do with the case.

The Coming of Don Juan

Sober and serious at heart as it was, in the way of being a devout reaction against the expansiveness, the vital turbulence of the preceding age, the sev-

enteenth century, Bossuet's century, not unnaturally tended to a thoughtful, introspective view of sex, a pensiveness and introspection that were to find expression toward the end of the century in the tragic resonances of the great sexual folk-myth of Don Juan. This legend, extremely widespread among the European peoples (it will be found all the way from Iceland to the Azores), achieved literary birth in Tirso de Molina's—if it is Tirso de Molina's—*El burlador de Sevilla y convidado*, etc., performed at Barcelona, in 1630, and has been given an additional lease on life by Zorrilla's play.

There are rumors of more than one real-life Don Juan Tenorio, ranging from Seville to the court of Peter the Cruel; but these are no more than rumors. Everywhere, meanwhile, the Ruthless Rake goes stalking through the folk literatures. He is to be found in the Picardian *Souper de fantome*, and a resemblance has been traced to the fifteenth-century legend of Robert le Diable. It would require an extensive bibliography to list all the works, most of them of very mediocre quality, which have been inspired by the theme since Tirso de Molina's time. Thanks chiefly to Mozart's music,⁷¹ and in a degree to the late Lord Byron's "Regency lady-killer," as Dr. James Fitzmaurice Kelly describes him, the legend has lasted down to the twentieth century.⁷²

⁷¹ There is also the ballet-music of Gluck; "and Henry Purcell's setting," remarks James Fitzmaurice Kelly, "has saved some of Shadwell's insipid lyrics from oblivion." See F. de Simone Brouwer's *Don Giovanni nella poesia e nell' arte musicale*, Naples, 1894.

⁷² One of the best critical studies of the Don Juan legend is that by the Italian critic, Arturo Farinelli, entitled *Don Giovanni: Note critiche*, Turin, 1896. See, in the *Homenaje a Menendez y Pelayo* (Madrid, 1899, Vol. I., pp. 205-222), the same author's *Quattro palabras sobre Don Juan y la literatura donjuanesca del porvenir*. For a highly readable French vulgarization of the three principal Don Juan versions (Spanish, Flemish and English), see the late Guillaume Apollinaire's *Les Trois Don Juans*, Paris, 1914. This work, by the way, now very rare, is an Apollinaire item, representing those labors in the

⁷⁰ Consult such works as: *Biblioteca Arcana; seu, Catalogus librorum penetralium; being brief notices of books that have been secretly printed, prohibited by law, seized, anathematized, burnt or Bowdlerized*; by Speculator Morum (1st series), 1885; see also: *Recherches bibliographiques sur des livres rares et curieux*, par P.-L. Jacob (bibliophile), 1880; cf. the *Forbidden Books* (Note 44, above).

"Who will kill Don Juan?" is the question seriously put in a recent Spanish study of the theme.⁷⁹

"I quote the question," says one reviewer, "to emphasize the fact that Don Juan is not dead, but rather is attaining an increasing vogue in contemporary literature. For two hundred years, roughly speaking, the main elements of Tirso's legend were more or less carefully retained, and treated largely in the genre of the drama. In the last hundred years, while the legend has been increasingly treated in prose fiction, elements have been falling away from it, until there is little left but the libertine—the seducer. And if the trend continues, it will not be long before any man who persuades some girl to marry him will thereby lay himself open to the charge of being a Don Juan."

This, of course, is in part to be explained by the usual linguistic process of word-weakening. In any case, the modern "Don Juan" is at a far remove from the tragic individual of the legend; and the popularization and degeneration of the term has undoubtedly been hastened by the contemporary Freudian psychology.

However this may be, Don Juan has taken his place, along with Don Quixote, in the national Spanish psychology and consciousness. This is indicated by Miguel de Unamuno's recent (1934) play, *El Hermano Juan, o el mundo es teatro*. Unamuno sees Don Juan as the eternal solitary, condemned to solitude and to self-love, who remains yet the eternal love-kindling myth, even in the marital embrace; he is, in inmost essence, the *Burlador*, the jester, the actor, in a world that is a stage and a life that

field of erotica which the great French modernist performed by way of piecing out a livelihood. Not to be overlooked is the distinguished Portuguese scholar, Fidelino de Figueiredo's recent study (in French) of the Don Juan influence in Portuguese literature, in *Donjuanisme et Anti-Donjuanisme en Portugal*. Coimbra, Imprensa da Universidade,

Don Juan en el teatro, en la novela y en la vida, por Francisco Agustin, con un estudio preliminar sobre la vejez de Don Juan, por el Gregorio Marañon, Madrid, 1928. And for Don Juan psychoanalyzed by a criminologist: *Un Triptico sobre Don Juan*, por Cesar Camargo y Marin, Madrid, Javier Morata, 1934.

is a dream (so, according to the heretic-mystic-theologic Unamuno); he is a phantom whose last amour, whose "*eterna novia*," is Death, the one Lady to whom he will not say No. All this stresses that sadness which is at the core of the legend, with a hero who is the impersonation of sterility, whose "inferno is of ice," but who has been elevated to a symbol of fertility. This melancholy aspect is brought out in Baudelaire's famous poem, which has the sharpness of a steel-engraving.

Sterility, amounting to impotency, and sadness are the outstanding characteristics of the Don Juan myth, as of the Casanova legend, when the myth and the legend are looked at closely; for the full implications of the former are best understood by skipping a century or so and studying the embodiment of the type in Casanova.

Casanova, or the Rake's Sadness

Don Giovanni Jacopo Casanova de Seingalt was a professional *homme à bonnes fortunes*—that seems to sum him up. His *Mémoires*, first published at Leipzig, in a 12-volume edition (1826–38), are at once his literary merit and the best source for his Rake's Progress of a life.⁸⁰ It is Casanova and the *Mémoires* that have made the shadowy, mythical figure of Don Juan come alive. There is more than the rake in Casanova, just as there is vastly more than the libertine in Rabelais; Rabelais was not really a libertine at all, but, as has been said, an intellectual sensualist; whereas Casanova was primarily the sexual adventurer. This is not to overlook his graces of style or the charms of an eighteenth-century personality that shine through his pages. The thing that he gives us above all, however, is an expression of the inexpressible sadness, the inherent melancholy, of a rake's existence; this it is which accounts for that *tristesse* which breathes up from his *Mémoires*, in its essence a Mediterranean sadness, but even more,

⁸⁰ For the Casanova bibliography, see Ottmann's *Jacob Casanova*, 1900.

that sadness to which the Rake is inevitably damned, the sadness of Don Juan, of Don Juan in hell.

Casanova has been referred to as an "embodiment" of Don Juan; this may not be exact, but it is near enough to serve. Putting aside, as of secondary importance, variants between the life and the myth, and granting the former's Ottocento lightness as against the dark Spanish seventeenth-century melodrama of the legend, De Seingalt is, without doubt, the metaphysical—shall we say, the Freudian?—incarnation of the Don Juan soul—shall we say the subconscious? He may laugh where his prototype gives a satanic sneer; he may pass off with a gallant *mot* what the tragic Spaniard would have finished with a rapier-thrust; but he is, for all of that, Don Juan and, like Don Juan, knows his hell, knows the lightning-bolt of adventurous destiny and the statue's closing fist that awaits him at the end.

This, needless to say, is hardly the Casanova that the ordinary collector of such compilations as *Les plus belles nuits de Casanova* knows. All of Casanova's nights, the truth is, were not *si belles*; and their sum, that transpiring odor of the *Mémoires*, is little less than Stygian.

Madame de La Fayette: Reason against the Heart

We must come back to the close of the seventeenth century, to find, with the publication, in 1678, of Madame de La Fayette's *La Princesse de Clèves*, the beginning of a new attitude toward love, as expressed in literature, on the part of woman. French critics are agreed that *La Princesse de Clèves* marks a date in the history of their literature comparable to the appearance of a *Cid*, an *Andromaque*, an *Hernani*, or a *Madame Bovary*. Anatole France says, in his Preface to the Conquet edition of the work: "*Andromaque* is of 1667, *La Princesse de Clèves* of 1678. Modern French literature starts from those two dates. *La Princesse de Clèves* is the first French novel the interest of which

rests upon the truthful depiction of the passions."

Henry Bordeaux, of the French Academy, author of a recent fine essay on Madame de La Fayette's masterpiece,⁸¹ tells us that "It (the work in question) does as a matter of fact mark the beginning of truth in the novel, in the analysis of passions and of manners. Up to that time, the novel on the contrary had been but a series of adventures designed to afford a rest from reality. . . . Women, with us, want to be besieged, even though they may be resolved to yield in the end; and the novel is the incessantly repeated story of this eternal siege. . . . Before *La Princesse de Clèves*, it had not been made plain that the battle, instead of being on the outside, in reality takes place within ourselves, in the secret folds of our human heart."

Upon its publication, *La Princesse de Clèves* provoked a dispute over authorship, similar to those called forth by the *Cid* and by *Hernani*. There are still those who have their doubts, as Mlle. Valentine Poizat, in her recent *La véritable Princesse de Clèves*; but such a critic as M. Bordeaux remains convinced. Mme. de La Fayette was accused of having filched her big scene from Mme. de Villedieu, author of *Les Désordres de l'amour*. The scene in question was the famous one in which the heroine, with virtue technically intact but with her heart gravely endangered, confesses to her husband and casts herself on his protection.

For what Mme. de La Fayette's heroine is concerned with, is protecting her heart through her reason. She sees through the passion of the conqueror of women who is laying siege to her, she counts the cost, what she knows she will have to suffer at eventually witnessing his becoming detached from her, his love growing cold—she sees all this, and she decides that it is not worth it; it is not worth the suffering it will mean (with

⁸¹ *Episodes de la vie littéraire*, 1934; the opening essay bears the title, "*La Princesse de Clèves, ou le Cœur et la Raison*."

which it is instructive to compare such a point of view as that set forth in the *Letters of a Portuguese Nun*). On the other hand, there is her husband's deep-suffering, loyal and protective love; and she chooses it. The "rehabilitation of the husband" has been accomplished in literature.

The Novel after "La Princesse de Clèves"

In her characterization of M. de Nemours, the Princess' lover, Mme. de La Fayette has drawn a portrait which is the antecedent of the Valmont of *Les Liaisons dangereuses* and of the Julien Sorel of Stendhal's *Le Rouge et le noir*, and which owes something on the literary side to Brantôme. But it is in her sensitive delineation of the "triangle," and the finer problems of feeling and delicacy, which it involves,—where before there had been, as with Rabelais' Dr. Rondibilis, but a resounding horse-laugh for the cuckold,—that the genuine novelty of the author's work lies. This, it is true, was to degenerate, in the hands of Eugène Sue and other purveyors to the popular stage, into the well known and utterly noisome "eternal triangle," and even into the bedroom farce; but the serious treatment of the question was also to be continued, and still is to this day. It is to be seen in such a work as George Sand's *Jacques*, for example, where a feminine logic is carried to a catastrophic conclusion; it is to be met with in Paul Bourget's *Un Drame dans le monde*, in Raymond Radiguet's *Le Bal du Comte d'Orgel*, etc.

There are a number of works of this general period which might be taken as having a significance for the history of love in literature.⁸² One might mention such a one as the *Liaisons dangereuses*, the Abbé Prevost's *Histoire de Manon Lescaut*, Voltaire's *Candide*, or that production so essentially eighteenth-century in spirit and feeling,

⁸² As Apollinaire points out in the Introduction to his translation, a work such as *Fanny Hill* has a value as throwing a light upon the state of prostitution in the British capital at this period.

the *Divan* of Crébillon fils. There is, too, the whole galaxy of seventeenth-to-eighteenth-century women writers to draw upon, Madame de Sévigné, Madame de Staël, etc., etc.—the journals, the letters, the witty *ripistes* and all of that; but none of these documents would have precisely the same importance that *La Princesse de Clèves* does. Madame de La Fayette's creation is one that marks the beginning of what M. Bordeaux aptly terms the Racinian concept of love on the part of woman, and it is thus the fountain-head of one of the two most distinguishable modern streams, the other being the one which runs from Rousseau to Ibsen, from the naturalism of *La Nouvelle Héloïse* to Nora and the Lady from the Sea and the Ibsenic passion for "expression."

"Adolphe," in Which the Male Wearies of Love

Next to *La Princesse de Clèves* in transitional significance is Benjamin Constant's *Adolphe*, reflective of the author's long-drawn-out liaison with Madame de Staël. Where woman, in the person of Madame de La Fayette or her heroine, has rejected love in advance, as coming too dear, the male now looks back over his love-experience and sees nothing but a vast and all-consuming weariness. *Adolphe* and *La Princesse de Clèves* together bespeak the point which the literary treatment of love had attained by the beginning of the nineteenth century, on the eve of the novel of adultery, and in the age of a Stendhal.

Stendhal and the Theory of "Crystallization"

In the Julien Sorel of his *Le Rouge et le noir*, Stendhal (Henri Beyle) has created a type of character who, erotically and in a wider sense, holds the elements of modernity, but whose lineage, as we have seen, may be traced as far back as Madame de La Fayette's heroine. In Stendhal's *De l'amour*, we once more have the reason at work on the heart and the heart's affairs; and this is the dominant note in Stendhal, the writer of memoirs. It is only

through the evolvment of such a theory as that of "crystallization" that the reason is able to explain the heart's unreasonableness; but while modern psychological science might be able to interpret it more amply, the theory appears to say little more than had already been said, poetically and symbolically, by Shakespeare, a century or two before; it remains in the end, with Stendhal—a word. The substance, with the author of *De l'amour* and *Le Rouge et le noir*, is a good deal more meaningful than any theoretic formulation which he may attempt.

One thing that is to be observed, from Madame de La Fayette (and for that matter, the *Letters of a Portuguese Nun*) down through Stendhal, is an ever-increasing consciousness of and sensitiveness to the *cruelty of love*, first given a literary precipitate, at the end of the eighteenth century, by a French nobleman who suffered from attacks of insanity.

Sade and Masoch: "Love Likes Blood"

The element of cruelty in love, whether in the form of an acute suffering or that of an excruciating weariness, finds a formal expression in the works of the Marquis de Sade, whose name, as in the case of his nineteenth-century psychological complement, Sacher Masoch, has added a word to the language. In one of Balzac's *Contes*, the sanguinary hero observes to his wife: "Love likes blood, Madame!" And love does like blood in De Sade's tales, his *Justine*, his *Juliette*, his *Philosophie dans le boudoir*, his *Les Crimes de l'amour*, published from 1791 to 1800. These, however, are something more than "sadistic" narratives. Sade was the possessor of an exquisite prose style; and it is something of a tragedy that the "immoral" character of his output should have led so completely to its literary merit's being overlooked.

It remained for the after-War Surrealists to revive Sade as one of their flaunted "precursors"; but a good deal more serious effort at a rehabilitation

of the author of *Justine* and *Juliette* is being made by M. Maurice Heine, the foremost living authority on the subject; M. Heine has been at work for years on a biography of Sade, which, when published, should be at once definitive, and startling in the new view it presents of the man.⁸³ He believes that the Marquis has been the victim of persecution, by reason of his atheism; for he was one of the pioneer systematic atheists of modern times, as is brought out in his *Dialogue between a Priest and a Dying Man*, a work that was uncovered by M. Heine.

Sade was, that is to say, a victim of the same sort of persecution, disguised as a solicitude for morals, that was leveled at Rabelais and at Rabelais' contemporary, Bonaventure des Périers, author of the *Cymbalum Mundi*, a point which Prof. Lefranc has been at pains to establish. De Sade, in short, had a fine if unbalanced mind (he spent his last years confined as an insane patient), a character that seems to have been above reproach, and a high literary gift as well.

As for the author of the *Venus in Furs*, presenting the other side of the shield of sexual cruelty, his work, while by no means lacking in literary quality, is not comparable in this respect to that of Sade. Outside the erotic field, Masoch is known as a short-story-writer and collector of Jewish and other folk tales; but it is safe to say that his purely literary work would scarcely have caused his name to survive; it is his attitude toward sex, as revealed in his wife's *Memoirs* and in his own writings, which has given him a significance with posterity.

The Nineteenth-Century Novel of Adultery

The nineteenth-century novel of adultery, which attains its highest peak in Flaubert's *Madame Bovary*, but which really first achieved form in Huysmans still untranslated and little known *En*

⁸³ See M. Heine's Introduction to the *Dialogue between a Priest and a Dying Man*, translated by the present writer, 1927.

rade, is reflective of the new seriousness which had been introduced into the treatment of the "eternal triangle," a century and more earlier, by Madame de La Fayette; and this note of seriousness was heightened by its close association with the new Naturalist school, founded by Zola, which was an effort to treat life at once seriously and realistically,—with a certain photographic realism in the case of Zola and the first of the school, and with a deepening art in the hands of Flaubert, Huysmans and the Goncourts.

It is worth noting that Huysmans' first novel, *Marthe*, was "the story of a prostitute," and that the author rushed its publication in order to get there before one of the Goncourts did with a novel on the same theme. Huysmans was one of the first to revolt against the Zola influence, and it was his disgust with the novel of adultery which led him to do this. "It changes merely with the upholstery fashions of the times," he averred; and the eternally recurring question was: "*Tombera? Tombera pas?* (Will she fall, or won't she?)" By way of exhibiting his disgust, he wrote *A rebours*, a novel with one character, and that one character a man!

Zola was furious, and accused Huysmans of having "destroyed the Naturalist school." All of this is set forth in the remarkable "Twenty-Year-After Preface" which Huysmans wrote for his *A rebours*. He himself, in his *Là-bas*, that dark and saturnine work in which the orgies of Gilles de Rais mingle with those of the Black Mass, was to go on and depict an adultery of a mystically gruesome variety; and this work (*Down There*), as well as the one in which he slays adultery (*Against the Grain*), is now one of the items on the curiosa-collector's list.

Baudelaire and His "Vénus Noire"

Charles Baudelaire, the Baudelaire of the "black Venus" and the green beard, author of *Les Fleurs du mal*, is the only one of the nineteenth-century

Decadents (unless the Huysmans of *A rebours* and *Là-bas* be so regarded) who has made a palpable contribution to the literature of love. Thanks to the high poetic quality of the *Flowers of Evil*, and to his masterly prose, Baudelaire's literary position is a high one; but in spite of this, his decadent view of love remains rather a personal *dandysme* than a living force.

Balzac and His "Droll Stories"

In an age when the Naturalists were making of adultery a frequently lugubrious thing, and were engaged in painting drab pictures of prostitutes, when the Baudelaires were seeking a dusky Venus, and Bernardin de St.-Pierre was penning a *Paul et Virginie*, representing a weird blend of a romantic exoticism à la Jean-Jacques with nineteenth-century puritanism, Honoré de Balzac, himself a great realist, turned aside from his tales of misers and the like and turned back for the moment to Rabelais, in an attempt to recapture, along with the latter's language, something of the Maitre's gusto and vitality with regard to sex and life. The attempt did not come off; and the result is, the *Contes drolatiques* are but a cold and artificial production, linguistically and in literary flavor, and add little or nothing either to Balzac's reputation or to the literature of love; they are an unsuccessful work of the study.

Victorian Love

The Victorian conception of love, as revealed in the vast number of works of fiction of the period, most of which have long since gone down to a deserved and nameless oblivion, is a prudish pseudo-romanticism of the "lived happy ever after" type. This, of course, is but a manifestation of Victorian morality and civilization as a whole, a civilization that drove its poets into exile. It is in revolt against the prevailing Victorianism that the work of a Swinburne, a Browning, a Keats, or a Shelley is produced. Swinburne attempts to give life

to a neo-pagan attitude, while Brown-ing devotes himself to a highly cerebral if poetic vivisection and analysis of passion (again, the reason and the heart); Keats seeks the pure Grecian beauty of an urn, and Shelley flits through life like an Ariel, to die a romantic death on romantic shores.

Possibly, the writer who may be said to stand for the Victorian spirit in its most elevated, intellectual and intellectually respectable form is George Meredith, author of *Modern Love*, a poem in which Victorianism is to be seen having doubts of itself on the subject of sex. As for women, the poet's cry, "More brain, O Lord, more brain!" is significant; the "New Woman" is in the offing.

The Catholic Love-Poets

The century produced, in England, two Catholic love-poets of considerable stature, in Francis Thompson and Coventry Patmore. The latter's *The Angel in the House* and the former's *Love in Dian's Lap* are perhaps the two highest expressions which the Catholic view of love has attained in modern times. Patmore was greatly interested in the subject of eroticism, and is known to have composed an esoteric treatise on the subject, which, upon the advice of his confessor, he burned before his death. Thompson, who belongs to the 1890 neo-decadent period, led a life that was not unlike Villon's in its environment and contacts, but which seems to have left him peculiarly unscathed, as did not happen in the case of the *mauvais garçon* of the fifteenth century.

Oscar Wilde and the "Naughty Nineties."

The 1890's, the decade of Aubrey Beardsley and *The Yellow Book*, of Whistler and Wilde, of Ernest Dowson, Francis Thompson, and Lionel Johnson, etc., were another form of reaction against the Age of Victoria. While Thompson, on the one hand, rescued from the mire of London by the Meynells, is writing his *Love in Dian's Lap*,

—"Cling to me and cling by me, Sweet, lest both should fall, Even in the breach of Heaven's assaulted wall"—Dowson is singing of Cynara and the ashes of a winy passion, and Oscar Wilde, scandalizing the world with his life and his stagy epigrams, is doing *The Portrait of Dorian Grey*. It is Wilde who probably best represents the epoch, at least in the popular imagination.

Across the Channel, there is Pierre Louys, creator of *Aphrodite* and the *Songs of Bilitis*. Louys, of the Symbolist generation, is the possessor of a real and fine poetic gift, brought to the service of a luscious and glowing pagan sensuality.

Ibsen, Shaw and the "New Woman"

In the meanwhile, Bernard Shaw, tramping the art galleries of London and making a name for himself as a journalist, is doing his best to make the British aware of a Norwegian dramatist by the name of Ibsen; and along with the bicycle, the New Woman is already coming in, letting herself be heard of. It was chiefly Shaw and Archer who were responsible for the English-speaking world's becoming aware of Ibsen; and it was Ibsen who made that world acquainted with Norah, with woman in quest of self-expression. Shaw, fancied and fanciful Fabian, was to contribute, in such plays as *Candida*, *How He Lied to Her Husband*, *The Devil's Disciple*, *Captain Brassbound's Conversion*, etc., his own satiric version,—always with the journalist's sense of effect. Continental playwrights, such as Hauptmann, Sudermann and others, will be found touching on the same theme, while the Viennese Schnitzler adds what is, it may be, the most real note of all, with his refined and satiric *Anatole*.

The Advent of Freud

This was about the state of affairs, with woman and love become almost the property of the art and little theatre repertory, when the influence of Sigmund Freud's *Traumdeutung* and other

works began to be diffused and to make itself felt in literature. To trace in detail the effect of the Freudian psychology on literature would require, not a volume, but volumes; the mere bibliography would be a staggering task, since it would have to take in practically every civilized literature, if it were to be anything like complete, while the permeations and percolations of the influence are so multitudinous and so fine, that completeness would, after all, be out of the question.

While Freudism enjoyed an enormous vogue during the after-War decade, it is no longer so "chic" as it once was, in intellectual-artistic advance-guard circles. This is in part a natural and inevitable reaction, and in part is due to a certain conflict of Freud with the new-impinging Marxian principles. This will no doubt have its influence upon the love-literature of the future; but Freud, we may be sure, will go on influencing writers for some time to come.

It is worthy of note, also, that certain writers, such as Andre Gide and Marcel Proust, who have contributed notably to the literature of love in recent years—the Proust of *La Prisonnière*, the Gide of *L'Immoraliste*, for example—are really not in the Freudian stream, although they may exhibit Freudian aspects. One feels that either of the two would have written the way he did, whether there had been a Freud or not. Proust's writing, especially, is a part of his way of seeing things, of his own vision of the world, and of his individual and unavoidable literary method.⁸⁴ Much the same might be said of Joyce and his Bloom, who owes a good deal more to M. Edouard du Jardin⁸⁵ and François Rabelais than he does to

Freud. And finally, there is D. H. Lawrence, who might be taken by some as the outstanding exemplar of the Freudian influence, but who, upon inspection, is found to be essentially a nostalgic Victorian.

"Lady Chatterley" and After

No "love-book" in recent years has created quite the stir attendant upon Lawrence's *Lady Chatterley's Lover*. This was due not alone to the character of the work, or rather, of its language, but to the author's distinguished literary past, the works that he had behind him, *Sons and Lovers*, *The Rainbow*, etc. No writer has been more pre-occupied with sex than Lawrence, and he is today the pabulum of the over-sexed or the sex-starved. It may come as a surprise, therefore, to be told that his sexual ideal is nothing more nor less than that of our great-grandparents.

This is the point of view of a French student of Lawrence, M. Saul C. Colin, in his *Naturalisme et mysticisme chez D. H. Lawrence*, published in 1932. And M. Colin makes rather a convincing case of it. The union of man and woman as a sacrament, segregation of the sexes in education, by way of preserving the attraction of mystery, the going of his own way by the man, with his own work to do in the world, the domination of the male, the submission of the female,—it is not hard to see that it all does, in a manner, hark back to the days of hoop-skirts. The French critic would even see Lawrence as in the line of the great Christian and other mystics. He traces the gradual growth of mysticism in Lawrence, shows its grafting upon an essentially naturalistic temperament, which accounts for the character of the fruitage.

Lawrence is "the prophet of a new world"; his object is: "To make some kind of an opening, some kind of a way for the afterwards." His gospel was cut short by death, but he had an apocalyptic end-of-an-epoch sense of things, "and God knows what will come after." He dreamed of a time when "sun-men"

⁸⁴ The best analysis, in brief, of the Proust method that this writer knows is that by the Spanish critic, Ortega y Gasset; see Ortega's paper, in English translation, in the Spanish section of *The European Caravan*, Vol. I., 1931.

⁸⁵ The author of *Les lauriers sont coupés*. An English translation of this work by Stuart Gilbert, under the title of *We'll to the Woods No More*, has been announced for some time.

should triumph on the earth, "darkly vegetable" and in quest of a "sombre perfection." There are two aspects to Lawrence's work: criticism of the world as it is, and a vision of a conceivable world to come, marking the return of a sort of golden age, when men should be "in touch" with one another.

Lawrence was, when all is said, the preacher, the English puritan, the uncompromising sectarian of the single-track mind. He had a sense of the outer world, but it was only the inner world that mattered. There is in him a certain "irreducible naturalism"; and in his early work, we see him inclining to a naturalistic rationalism of "the universe can be explained" brand; yet he ended as a mystic, with all the stigmata of mystic possession, including the search for "the living God," a growing sense of the irreality of the universe, of the world of appearances, a quest for "a new knowledge of eternity in the flux of time," inner self-struggles, even the mystic's quietism; St. Theresa's words may be quoted: "You would be terror-struck, if God were to reveal to you the manner in which he treats the meditative; the tribulations through which God causes them to pass are unbearable."

There are also the pathologic signs, the characteristic disturbances of the mystic state, the end being a species of self-triumph and self-conquest as with the mystic, what psychologists know as a "theopathic condition." Lawrence's anti-social tendencies come in here, his social mal-adaptation and inadaptability, a mystic trait that has been stressed by Pierre Janet and others. At the end, the author of *The Boy in the Bush* can exclaim: "The Lord is with me!" He knows there is no such thing as freedom; he has found his "dark God."

The mystic state is usually or often provoked by a shock, and M. Colin finds two such shocks in Lawrence's case. One was the war, the other was woman. The French writer dwells upon a phase of Lawrence that has been little noticed, namely, his reaction, not to his mother,

but to his coal-miner father; his evolved "dark God" is simply an enlarged portrait of his father, "whom Lawrence feared and subconsciously loved." And the linguistic influence of the rough-talking sire is visible in *Lady Chatterley's Lover*.⁸⁶

It is its language which gives the book its uniqueness. Not that the words which Lawrence employs had not been used numberless times before; but here, for the first time, they are employed, not coarsely, by way of provoking a Rabelaisian guffaw, not brutally or contemptuously, but gently, delicately, with the obvious intention of poeticizing them, in the face of a hypocritical society that is beneath contempt. If the effect does not always quite come off with the reader, this is for the reason that words have proved too strong, too deeply rooted, for the writer to be able to pull them up and give them a new meaning and connotation. There is, too, more than once, an over-sentimentalization of gesture that destroys the impression.

Nevertheless, *Lady Chatterley's Lover* remains something new in the literature of love. The Catholic François Mauriac⁸⁷ is to be heard wondering, what is to come after *Lady Chatterley*? "I shudder to think," he says, "of that terrible book, *Lady Chatterley's Old Age*." But that is something that Lawrence was not thinking about.

Puritanism and the Book-Censorship; the American "Comstockery."—Despite the fact that it came from a writer of Lawrence's admitted stature, *Lady Chatterley's Lover* was from the start, and still is, banned by the United States Customs, which in recent years has come more and more to exercise its powers

⁸⁶ The class-implications with respect to Lawrence are brought out in Frieda Lawrence's *Not I, But the Wind*, 1934. In speaking of *Lady Chatterley's Lover*, the author writes: "He had done it . . . and future generations will benefit, his own race that he loved and his own class, that is less inhibited, for he spoke out of them and for them."

⁸⁷ *Lady Chatterley's Lover* was a phenomenal best-seller in France (like *Gentlemen Prefer Blondes*), created a storm in the press, and was removed from the outdoor (but not the indoor) stalls by police order in Paris.

of censorship over works of art brought in from abroad.⁸⁸ And inside the country, the anti-vice organizations, especially in New York City and in Boston,⁸⁹ took it upon themselves, under such leaders as the late Anthony Comstock and his successors, to maintain an unrelenting watch over all that issued from the press, the apparent aim being to suppress all that a girl of twelve or fifteen years of age might not be able to read with impunity.

The effect of any such surveillance was pernicious, enlightened Americans felt, for literary creation, the general tendency of such legislation or practice being to render a vital literature impossible.⁹⁰ The protests accordingly multiplied, counter-organizations were formed, meetings held,⁹¹ etc., with editors, authors and publishers banding together, and with nation-known writers keeping up an incessant attack on "Comstockery."

Perhaps the most notorious and flagrant case of abuse of the censorship was the suppression and prosecution of James Joyce's *Ulysses*, when partly published in serial form in Margaret Anderson's *The Little Review*, at the close of the War; and *Ulysses* was for a decade and more excluded by the Customs. *The Well of Loneliness* case, in 1929, attracted wide attention and resulted in a signal victory for the publishers; it was this case which morally broke the power of the Sumner censorship in the State of New York. Later, the court-ban was lifted from Joyce's work, which may now be sold freely and openly; and "the Comstocks" have all but become a bogey of the past, their decline doubtless having been hastened by the advent of the Depression, the

⁸⁸ A case in point is the Brancusi sculptures, some years ago; although the question here was not one of obscenity, but had to do with whether or not the creations were works of art, and hence, taxable or not. It was found that a Congressional statute actually defined a work of plastic art as a recognizable likeness of the original.

⁸⁹ The famous Watch and Ward Society. The incident of H. L. Mencken's selling copies of a banned issue of *The American Mercury* in the streets of Boston, in order to get himself arrested as a test-case, is well known.

⁹⁰ There is no doubt that works of debatable or no literary worth frequently took cover under this anti-censorship crusade. The authors' letters protesting against the suppression of Cabell's *Jurgen*, for example, were in many instances decidedly equivocal, the writers declaring either that they had not read the book, or that they did not approve it from a literary point of view, but that they were protesting *en principe* against any kind of book censorship.

⁹¹ Some of these demonstrations did the anti-censorship cause more harm than good, through the adolescent joocular attitude adopted toward the subject by certain of the speakers.

other and weightier concerns (including the repeal of Prohibition) and the new seriousness which the Depression brought with it.

This over-prying attitude toward "immorality" in art has been seen as the pioneer American Puritanism, percolating down through the various Protestant sects, notably the Methodists and the Baptists. It would seem to be, none the less, a stage that most peoples go through at one period or another. We have seen the beginning of modern book legislation in France, in 1621-23. Before that time, it had been only the most flagrant affronts that were punished, as in the case of Raimondi's Aretino engravings; or else, it had been a case of getting at a writer for a more serious offense, political or theological, usually the latter (atheism), as with Rabelais and the Marquis de Sade. In nineteenth-century France, we have heard of prosecutions directed at such fine works and masterpieces as *Made-moiselle de Maupin*, *Madame Bovary*, *Les Fleurs du mal*, etc.; but by the twentieth century, France seemed to have recovered almost completely from any attack of prudery she may ever have experienced.

One thing that the literary censorship always does is to stimulate the under-cover circulation of the banned book, and to increase its price by, presumably, increasing its rarity, making it a sought-after item by collectors and the curious ones. This was what happened in America, where the under-the-counter trade, spoken of at the beginning of this paper, and including the subscribed and the limited edition, was for a period of years a flourishing and a lucrative one. This traffic, however, has been greatly diminished by the Depression and by the relaxation in the censorship, and the legitimate publisher has practically abandoned the issuing of high-priced subscription volumes of a more or less erotic nature.

Love in the Soviets

The World Crisis cut short many things, blocked many currents that might, conceivably, have flowed on indefinitely. New forces, new modes of thinking are operative now, and our literature and our art, like all the rest, is changing. Freud, as has been said, is fast becoming unfashionable in the younger milieux; and it is interesting to speculate as to just what the next literary attitude toward love is to be. The quarter from which something novel in this respect is commonly looked for is the Soviet Union.

There has been much vulgar gossip of "free love" in the new proletarian state, where truth is, the Russians under the

Soviets would seem to be tending toward a monogamy with divorce rendered simple. Lenin's words, "Sexual promiscuity is not necessary to the success of the Revolution," may be recalled.

As for a literary statement of the new-evolving ideals of love, the Soviet writers have up to now been more concerned with the broader collective problems of socialist construction; the love-theme has savored too much of the individual, the subjective and the bourgeois. A new subjectivity, however, has made its appearance within the past year or so, and Stalin, at the last (1934) All-Union Congress of Soviet Writers, declared that the Soviet literature must become more complicated as the new society grew less simple in structure. Karl Radek, one of the leading Soviet writers and theoreticians, announced at the same gathering that he was able to discern the possibility of a "new eroticism"; while André Malraux, French delegate, took occasion to speak of a newly created "Soviet woman" whom he had noticed. We may, accordingly, await a fuller formulation of the love question than any they have yet given us, from the young writers of the Union of Soviet Socialist Republics.

S. P.

LOCHIA. In Greek mythology, Lochia was a surname of Diana, who although herself a virgin, aided women in childbirth. In medicine, the lochia are the utero-vaginal discharges following childbirth, coming in part from the wounds of labor and tissue débris, and in part from the glands of the genitals. At first the lochia are red, since they consist mainly of blood (*lochia rubra*), later the lochial discharge becomes paler and serous (*lochia serosa*), and finally the white blood-corpuscles predominate (*lochia alba*). The lochial stream takes with it the genital bacterial fauna, which for that reason are often pathogenic for the mother, child and attendants. The quantity of lochial flow of course varies with the individual, and may have been more abundant in ancient times, since Hippocrates estimated the

amount greater than the 500 grams of modern accoucheurs.

Color illustrations of lochia in Joseph Bolivar De Lee: *Principles and Practice of Obstetrics* (1933 *).

LOUÏS, PIERRE (1870–1926), French author, devoted his entire career to literature and learning. He married (1899) Louise de Hérédia, youngest daughter of José-Marie de Hérédia (of West Indian birth and Spanish-Creole and French descent), master of the modern French sonnet. Before he was out of his teens, LouÏs had founded a literary review, *La Conque*, which numbered Swinburne, Valéry, Mallarmé, and Maeterlinck among its contributors. His first book of poems, the erotic Hellenistic *Astarté* (1891), revealed a new pagan among the Parnassians of Paris. His celebration of Sapphic Love, *Les Chansons de Bilitis* (1894), claiming to be a translation from an unknown Greek source, is said to have deceived some students of the classics.

Certain passages in the preface drew forth a criticism from the philologist Ulrich von Willamowitz-Moellendorf, which is testimony that at an early age LouÏs was moving in the company of scholars. A suite of these "Songs of Bilitis" was set to music by Claude Debussy.

Upon the publication of *Aphrodite* (1896), a novel of life in ancient Alexandria, the youthful author became notorious. The book had an enormous sale, and is still featured in catalogues of sex-books. His last work, a collection of five stories, *Crepuscle des Nymphes* (1925), was another striking contribution to Greek erotology. The following works of Pierre LouÏs are available in English translation: *Aphrodite* (1920), *Woman and the Puppet* (1922), *Leda* (1922), *The Adventures of King Pausole* (1926), *The Songs of Bilitis* (1926), *The Twilight of the Nymphs* (1927).

W. A. Drake (*Contemporary European Writers*, 1928, 192–200): "The reputation of Pierre LouÏs suffers unfortunately and unfairly from the peculiar notoriety of his masterpieces. The author of *Aphrodite* and *Les Chansons de Bilitis* is not a carnalist, but, in spirit and in fact, one of the purest Hellenists of our generation. . . . François Coppée hailed *Aphrodite*,

upon its first appearance, as a great historical novel, and the most intelligent French critics have always regarded it as such; but its immense popular sale, based on its suspect, rather than its sterling literary qualities, has left it and its gifted author in a hopelessly misunderstood position before the world. For Pierre Louÿs really is an eminently respectable, if perhaps not a very great artist, and the least we can grant him is sincerity and a serious purpose in his art. He was also a highly reputed archeologist, and, although he did not, like Mérimée, achieve the seat which he deserved in the Academy of Inscriptions, his erudition is attested by many learned monographs on the life of ancient Greece and by his work in the *Revue des Livres Anciens*, which he edited for many years."—Oscar Wilde's *Salomé* (1893) was dedicated: "A mon Ami, Pierre Louÿs."

MAENAD. The word literally means a mad woman. It came to be applied to the Bacchant, or devotee of Bacchus. Aeschylus, in the *Eumenides*, uses it of the Furies. See BACCHANTE.

MAIDENHEAD, the state of maidenhood or virginity; the unruptured hymen or vaginal membrane which is considered proof of virginity.

Marguerite d'Angoulême (*Heptameron*, 1558, lxii): "The young nun who had been seduced by the prior at last craved leave to go to Rome, for she thought, if she could but confess her sins at the feet of the Pope, her maidenhead would come back to her."

MARRIAGE.

1. DEFINITION OF MARRIAGE.
2. THE ORIGIN OF MARRIAGE.
3. THE THEORY OF PRIMITIVE PROMISCUITY.
4. THE MATERNAL UNCLE.
5. THE FREQUENCY OF MARRIAGE AND THE MARRIAGE AGE.
6. THE CHOICE OF PARTNER.
7. ENDOGAMOUS RULES.
8. EXOGAMOUS RULES.
9. MARRIAGE BY CAPTURE.
10. CONSENT AS A CONDITION OF MARRIAGE.
11. MARRIAGE BY CONSIDERATION.
12. GIFTS TO THE BRIDE.
13. MARRIAGE RITES.
14. MONOGAMY AND POLYGyny.
15. POLYANDRY.
16. GROUP-MARRIAGE.
17. THE DURATION OF MARRIAGE AND THE RIGHT TO DISSOLVE IT.

Definition of Marriage

Marriage, as a term for a social institution, may be defined as a relation of one or more men to one or more women which is recognised by custom or law and involves certain rights

and duties both in the case of the parties entering the union and in the case of the children born of it. These rights and duties vary among different peoples, but there must of course be something that they have in common. Marriage always implies the right of sexual intercourse: society holds such intercourse allowable in the case of husband and wife, and, generally speaking, even regards it as their duty to gratify in some measure the other partner's desire.

But at the same time marriage is an economic institution, which may in various ways affect the proprietary rights of the parties. It is the husband's duty, so far as it is possible and necessary, to support his wife and children, but it may also be their duty to work for him. As a general rule, he has some power over them, although his power over the children is in most cases of limited duration. Very often marriage determines the place that a newly born individual is to take in the social structure of the community to which he or she belongs; though there are also peoples among whom illegitimate children are treated like legitimate ones with regard to descent, inheritance, and succession. It is, finally, necessary that the union, to be recognised as a marriage, should be concluded in accordance with the rules laid down by custom or law, whatever these rules may be.

The Origin of Marriage

As for the origin of the institution of marriage, it has most probably developed out of a primeval habit. We seem to have good reason to believe that, even in primitive times, it was the habit for a man and a woman, or several women, to live together, to have sexual relations with one another, and to rear their offspring in common, the man being the guardian of his family and the woman being his helpmate and the nurse of their children. This habit was sanctioned by custom, and afterwards by law, and was thus transformed into a social institution.

Similar habits are found among many species of the animal kingdom, in which male and female remain together not only during the pairing season but till after the birth of the offspring. We may assume that they are induced to do so by an instinct which has been acquired through the process of natural selection, because it has a tendency to preserve the next generation and thereby the species. This is indicated by the fact that in such cases the male not only stays with the female and young, but also takes care of them. Marital and paternal instincts, like maternal affection, seem to be necessary for the existence of certain species. This is the case with birds; among the large majority of them male and female keep together even after the breeding season, and in very many species the parental instinct has reached a high degree of intensity on the father's side as well as on the mother's.

Among mammals the young cannot do without their mother, who is consequently ardently concerned for their welfare, nursing them with much affection; but in most of them the relations between the sexes are restricted to the pairing season. Yet there are also various species in which they are of a more durable character, and the male acts as a guardian of the family. To these belong the apes. According to nearly all earlier accounts of the orang-utan only solitary old males, or females with young, or sometimes females and at other times males accompanied by half-grown young, had been met with; but more recently Volz and Munnecke have definitely proved the existence of family associations with that ape, whereas it apparently never, or scarcely ever, congregates in larger groups. The social unit of the chimpanzee and gorilla is the family, but several families may associate and then constitute a band or herd, in which a mature male acts as leader. According to Zuckerman, the family is the nucleus of the society also among the

smaller gregarious monkeys, never losing its identity within the herd; even the enormous hordes of a species like the baboon consist of numerous families banded together.

In the case of the apes there are some obvious facts that may account for the need of marital and paternal protection. One is the small number of young; the female brings forth but one at a time. Another is the long period of infancy; the gibbon seems to achieve sexual maturity at five to eight years of age, the orang-utan and chimpanzee at eight to twelve, the gorilla at ten to fourteen (R. M. and Ada W. Yerkes). Finally, none of these apes is permanently gregarious; even in the Cameroons, where the gorilla is particularly sociable, the herd scatters over a fairly wide district in search of food.

These considerations are of importance for a discussion of the origin of the family in mankind. The family consisting of parents and children prevails among the lowest savages as well as among the most civilised races of men; and we may suppose that the factors which led to marital and paternal relations among the apes also operated with a similar result among our earliest human or half-human ancestors. If, as most authorities maintain, on the basis of morphological resemblances, man and apes have evolved from a common type, there is no doubt that in mankind, too, the number of children has always been comparatively very small, and that the period of infancy has always been comparatively very long; and it seems highly probable that with primitive man, as with the anthropoids, the large quantities of food which he required on account of his size were a hindrance to a permanently gregarious mode of life, and therefore made family relations the more useful for the preservation of the offspring.

There are even now many low savages among whom the separate families often are compelled to give up

the protection afforded them by living together, in order to find the food necessary for their subsistence, and may remain separated from the common group even for a considerable time; and this is the case not only in desolate regions where the supply of food is unusually scarce, but even in countries much more favoured by nature.

It seems, then, that marriage is based on instincts which have caused the sexes to remain united and the male to be the guardian of the female and their common offspring. That the functions of the husband and father are not merely of the sexual and procreative kind, but involve the duties of supporting and protecting the wife and children, is testified by an array of facts relating to peoples in all quarters of the world and in all stages of civilisation. Many savages do not allow a man to marry until he has given some proof of his ability to fulfil those duties. Marriage and the family are thus most intimately connected with one another. Indeed, among many peoples, true married life does not begin for persons who are formally married or betrothed, or a marriage does not become definite, until a child is born or there are signs of pregnancy; while in other cases sexual relations that happen to lead to pregnancy or the birth of a child are as a rule followed by marriage or make marriage compulsory. We may truly say that marriage is rooted in the family rather than the family in marriage.

The Theory of Primitive Promiscuity

There are statements to the effect that certain peoples live or have lived in a state of promiscuity without any family ties; there are various customs which have been interpreted as survivals of such a state in the past; and the hypothesis has been set forth that promiscuity prevailed universally among primitive men.

As to the peoples said to live in a

state of promiscuity it seems difficult to find a more untrustworthy collection of statements. Some of them are simply misrepresentations of theorists in which sexual laxity, frequency of separation, polyandry, group-marriage or something like it, or absence of a marriage ceremony or of a word for "to marry" or of a marriage union similar to our own, are confounded with promiscuity. Others are based upon indefinite evidence which may be interpreted in one way or other, or on information proved to be inaccurate. And not a single statement can be said to be authoritative or even to make the existence of promiscuity as the regular form of the relations between the sexes at all probable in any case.

That no known savage people nowadays is, or recently was, living in such a state is quite obvious; and this greatly discredits the supposition that promiscuity prevailed among any of the peoples mentioned by classical or mediæval writers in their summary and vague accounts. Considering how uncertain the information is which people give about the sexual relations of their own neighbours, we must be careful not to accept as trustworthy evidence the statements made by Greek or Roman writers with reference to more or less distant tribes in Africa or Asia of whom they manifestly possessed very little knowledge.

Nor can I ascribe any evidentiary value at all to the supposed survivals of earlier promiscuity. After a detailed examination of them in my *History of Human Marriage* I arrived at the conclusion that none of them presupposes, or even could be due to, former promiscuity, and suggested quite different explanations of them.

The hypothesis of promiscuity, however, not only lacks all foundation in facts, but is actually opposed to the most probable inference we are able to make as regards the early condition of mankind. Darwin remarked that from what we know of the jealousy of all male quadrupeds promiscuous intercourse is utterly unlikely to prevail in a state of nature.

The Maternal Uncle

There are peoples among whom a child stands in a more intimate relation to its maternal uncle than to its father. In a very few exceptional cases—among some agricultural tribes in Sumatra and Assam—it is said to be the custom for the husband not to live with his wife at all, but merely to pay her visits in the place where she dwells with her maternal relatives; and the children she bears remain with her. More frequently we are told that the mother's brother has greater rights over the children than the father, or even exclusive rights over them. These cases are found among some of the very numerous uncivilised peoples who reckon descent through the mother only. Yet it is hard to believe that the father really is devoid of all power over his children while they remain in his house, even where, as is often the case, matrilineal descent is combined with matrilocal marriage, which implies that the married couple live with the wife's people. And it must not be supposed to be the general rule among matrilineal tribes that the maternal uncle or any other member of the mother's kin has more authority over the children than the father. In all Australian tribes, whether patrilineal or matrilineal, the father is most distinctly the head of the family. The same is the case in many parts of Melanesia where descent is traced through the mother: "the house of the family is the father's, the garden is his, the rule and government are his." And so forth.

In any case the elementary paternal duties seem to be recognised universally while the children live with their father, whatever be his rights over them. Some anthropologists maintain that the family consisting of father, mother, and children has everywhere been preceded by a social organisation where the father was a wholly subordinate personage. But they are faced by the formidable fact that among those very low savages who

subsist chiefly or exclusively on game and such products of nature as they can gather without cultivating the soil or breeding domestic animals, the family consisting of parents and children is a very distinct social unit with the father as its head and protector.

The Frequency of Marriage and the Marriage Age

Among the uncivilised races of men marriage not only exists, but is much more frequent than among ourselves. As a general rule, nearly every man endeavors to marry when he has reached the age of puberty—if he has not been betrothed before—and practically every woman gets married. I think we may also safely say that among all savages the girls marry at an earlier age than among the peoples of Western civilisation, and the same is probably in most cases true of the men.

The young savage will find little difficulty in supporting a family. Yet even in savage life there are circumstances that may compel men to live unmarried for a longer or shorter time. Of many simple peoples we are told that the necessity of paying a bride price is a more or less frequent obstacle to early marriages or even a cause of lasting celibacy. A poor man may find it particularly difficult, if not impossible, to procure a wife where the males outnumber the females, as is the case in many savage communities; and polygyny, in connection with an unequal distribution of property, is very frequently reported to cause celibacy among the poorer and younger men.

Among peoples of archaic culture, as among most uncivilised races, celibacy is a great exception and marriage regarded as a duty. There is a strong religious motive for this. According to Chinese ideas it is one of the greatest misfortunes that could befall a man to die without leaving a son to perpetuate the family cult, and at the same time it is an offence against the

whole line of ancestors in the Nether-world, who would be doomed to a pitiable existence without descendants enough to serve them properly. Among the Semites we likewise meet with the idea that a dead man who has no children will miss something in Shēol through not receiving that kind of worship which ancestors in early times appear to have received. The Hebrews looked upon marriage as a religious duty. According to the Shūlhān 'Ārūkh, the recognised Jewish code, he who abstains from marrying is guilty of bloodshed, diminishes the image of God, and causes the divine presence to withdraw from Israel; hence a single man past twenty may be compelled by the court to take a wife.

The so-called Aryan nations in ancient times, as Fustel de Coulanges and others have pointed out, regarded celibacy as an impiety and a misfortune; "an impiety, because one who did not marry put the happiness of the manes of the family in peril; a misfortune, because he himself would receive no worship after his death." The old idea still survives in India: "a Hindu man must marry and beget children to perform his funeral rites, lest his spirit wander uneasily in the waste places of the earth." Marriage is a duty that every parent must perform for his children, and there is no greater reproach for a high-class Hindu than to have a daughter unmarried at the age of puberty. A considerable number of Hindus of both sexes are married in their infancy, but these child-marriages do not as a rule imply immediate cohabitation.

The ancient Greeks looked upon marriage as a matter both of public and private importance, and in various places criminal proceedings might be taken against celibates. So also the conviction that the founding of a house and the begetting of children constituted a moral necessity and a public duty had a deep hold of the Roman mind in early times. But in later periods, when the relations be-

tween the sexes became very free, celibacy increased in proportion, especially among the upper classes, where marriage came to be looked upon as a burden that people took upon themselves at the best in the public interest.

Christianity introduced a view of marriage which greatly differed from that generally held by the ancient peoples of culture. St. Paul considered celibacy to be preferable to marriage. "He that giveth her (his virgin) in marriage doeth well; but he that giveth her not in marriage doeth better." "It is good for a man not to touch a woman. Nevertheless, to avoid fornication, let each man have his own wife, and let each woman have her own husband." These and other passages in the New Testament inspired a general enthusiasm for virginity; it was compared to a spring flower, always softly exhaling immortality from its white petals. The use of marriage was permitted to man only as a necessary expedient for the continuance of the human race and as a restraint, however imperfect, on the natural licentiousness of desire. The procreation of children was considered the measure of a Christian's indulgence in appetite, just as the husbandman sowing the seed into the ground awaits the harvest, not sowing more upon it. These opinions led by degrees to the obligatory celibacy of the secular and regular clergy.

The laws of all Christian countries fix the lowest age at which marriage is allowed for males and females. The stipulation of the Roman law, according to which a man may marry at the age of fourteen and a woman at the age of twelve, was adopted by the Church, and is, under the influence of Canon law, still preserved in various countries; but the general tendency of the later legislation has been to raise the age-limit, which may even be as high as twenty-one for men and eighteen for women. In many countries, however, where the canonic age-limit has not been preserved, the obstacle

to marrying at an earlier age than that which the law admits may be removed by dispensation. Besides the limit below which marriage is prohibited there is frequently another higher one below which a marriage can only be contracted with the consent of parents, guardians, or other persons having control of the parties.

As to the age at which people actually marry and the marriage-rate, it may be said generally that modern civilisation has proved unfavourable to the latter and has raised the average age at which marriages are concluded. They vary greatly in different European countries, as appears from the following figures, which give the annual number of marriages per 10,000 marriageable persons, that is, males eighteen years of age or over and females fifteen years or over who are either single, widowed, or divorced; the figures refer almost entirely to periods which were uninfluenced by the particular circumstances connected with the Great War.

The number of marriages was in Serbia (1896-1905) 1,386, in Bulgaria (1910-11) 1,223, in Russia—not including Finland and Poland—(1896-7) 921, in Roumania (1896-1903) 873, in Hungary (1906-15) 778, in Germany (1907-14) 569, in France (1910-11) 539, in Austria (1908-13) 536, in England and Wales (1907-14) 507, in Norway (the same period) 418, in Scotland (the same period) 411, in Finland (1906-15) 398, in Sweden (1908-13) 367, in Iceland (1906-15) 335, and in Ireland (1909-12) 254.

The average age of the bachelors and the spinsters who enter into matrimony was in Serbia (1896-1900) 21.8 and 19.7 respectively, in Italy (1911-14) 27.2 and 23.6, in Germany (the same period) 27.4 and 24.7, in England (1906-14) 27.4 and 25.7, in Scotland (the same period) 27.8 and 25.8, in France (1906-10) 28.0 and 23.7, and in Sweden (1906-13) 28.8 and 26.4. In recent times the proportion of unmarried people is known to have increased in various European countries and the marriage age to have risen. In England and Wales the annual number of marriages per 10,000 marriageable persons was, in 1876-85, 568; in 1886-95, 529; in 1896-1905, 531; in 1907-14, as already said, 507; but in 1911-14, a little higher than in 1906-10. The average age of bachelor-bridegrooms and of spinster-brides was, in 1876-85, 25.9 and 24.4 respec-

tively; in 1886-95, 26.4 and 24.9; in 1896-1905, 26.8 and 25.3; in 1906-10, 27.2 and 25.6.

In England since the war, though the fall of births continues, the trend of marriage looks like being upwards; but this trend is not marked and might be due to changes of age constitution. In the war and just after; the age of marriage went up and down erratically; but from 1922 onwards it has been falling steadily for men and falling also, though less markedly, for women. To-day, in England, both men and women are marrying earlier than they did just before the war. Whether this lower age of marriage is a consequence of the war or would have come in any case requires further enquiry.

In the United States the trend of marriage differs from that in Europe. Statistics show a steady increase of the number of marriages in proportion to the population at every census decade since 1890, and at the same time the age of marriage has become lower. The number of marriages per 1,000 persons fifteen years of age or over was, in 1890, 553; in 1900, 557; in 1910, 573; in 1920, 599. In 1930 the percentages of married men and women of the population fifteen years of age or over were 60.0 and 61.1 respectively, against 53.9 and 56.8 in 1890.

The variations of the marriage-rate and the age of marriage are due to a variety of causes, some of which are of a more local and others of a more general character. The importance of the economic factor has been much emphasised by statisticians; but Hermann's formula that "the number of marriages in any period expresses the expectation of economic prosperity prevailing at that time," has only a relative value. In spite of general economic progress people may become more unwilling to marry on account of an increasing standard of comfort. In this respect there is a difference between different social classes. Generally speaking, the average age of marriage is more advanced among the upper classes than among the lower ones; but for this there are other causes besides the different standards of living. From the economic point of view there is hardly any reason to put off marrying for men who earn in youth almost as much as in later life; and it may also be said that a man requires more time to gain his living by intel-

lectual than by material work. Another economic factor is the increasing independence of women, which provides them with means of earning their living by their own efforts alone.

But besides factors of an economic character there are others which may make men and women less inclined to enter into matrimony. In modern society married life has lost in some measure its advantage over a single life; the domestic circle has become less important to either man or woman; there are so many pleasures now that can be enjoyed as well or even better in celibacy. The marriage and divorce laws of Christian countries are also no doubt responsible for a certain number of persons remaining celibates. We may assume that if the union could be more easily dissolved it would be more readily entered into. And the law of monogamy is necessarily a cause of celibacy where the adult women outnumber the adult men. If we reckon the age of marriage from twenty to fifty years, it has been calculated that in Europe a hundred men may choose amongst a hundred and three or four women, so that about three or four women per cent. are in normal circumstances doomed to a single life on account of our obligatory monogamy.

The Choice of Partner

The selection of a wife or a husband may depend upon instinctive preference. Darwin has shown that among the lower Vertebrates the female often shows a predilection for "the most vigorous, defiant, and mettlesome male"; and a similar instinctive appreciation of masculine strength and valor is found in women. We may assume that this appreciation is due to natural selection in more than one way. A strong and courageous man is not only a likely father of strong and courageous children, but he is also better able than a weak and cowardly man to protect his offspring. And at the same time women's admiration of

manly strength may, as Havelock Ellis suggests, be connected with the fact that the more energetic part in physical love belongs to the man, and that the spectacle of force is "the visual expression of pressure energy."

Manly strength is closely connected with manly beauty. Physical beauty may be defined as such qualities of the body as are apt to call forth esthetic enjoyment; but at the same time these qualities, or at least some of them, have also a tendency to stimulate the sexual instinct of the opposite sex, male or female. There are three groups of qualities that are regarded as essential for personal beauty, apart from merely individual preferences. There is, first, an ideal of beauty that is undoubtedly common to all mankind. The full and healthy development of those visible properties which are essential to the human organism may be assumed to be universally recognised as indispensable to perfect beauty—physical deformity, an unsymmetrical shape of the body, apparent traces of disease or old age, being regarded as unfavourable to personal appearance. A distinction is made between masculine and feminine beauty, and in spite of racial differences the ideas of what constitutes these forms of beauty are fundamentally similar throughout the world. To be considered really beautiful a person must be a fair specimen of his or her sex with reference to the secondary sexual characters belonging to it. Finally, there is a racial standard of beauty, which differs in different races of men, each race considering its own type preferable to every other.

In order to be able to explain the fact that the same qualities as are apt to call forth esthetic feelings and therefore are styled beautiful also have a tendency to stimulate the sexual instinct, we have to consider that the bodily qualities which are deemed beautiful are useful to the species. They are expressions of vitality, vigor, and health, or are closely connected with propagation. The stimulating

effect of a youthful appearance in a woman has undoubtedly something to do with her capacity of bearing children, and a full development of her principal secondary sexual characters is the condition of a healthy motherhood. As for the racial type of beauty, we may take for granted that racial peculiarities are connected with the external circumstances in which the various races live, and are particularly suited to those circumstances. Typical beauty is thus in any case, whether referring to qualities peculiar to the species or to the sex or to the race, the outward manifestation of physical perfection or fitness. And the development of the instinctive preference for it is evidently within the power of natural selection.

Personal appearance may stimulate the sexual instinct not only on account of its physical beauty but also as an expression of mental qualities. The passion which unites the sexes is perhaps the most compound of all human feelings. Herbert Spencer sums up his often quoted analysis of it in the following words: "Round the physical feeling forming the nucleus of the whole, are gathered the feelings produced by personal beauty, that constituting simple attachment, those of reverence, of love of approbation, of self-esteem, of property, of love of freedom, of sympathy. These, all greatly exalted, and severally tending to reflect their excitements on one another, unite to form the mental state we call love." Hence emotional, moral, and intellectual qualities may, by evoking affection, approbation, or admiration, indirectly act as sexual stimulants. Their influence in this respect has greatly increased in the course of mental evolution. Yet however much influenced by the appreciation of mental qualities, the connection between the sexual impulse and affection in the human race may even, in some degree, have been an inheritance from an ape-like progenitor, showing

itself in the care that the male takes of his female companion.

Cultural similarities, such as similarity of education, language, habits and manners, interests, tastes, and ideals, influence the choice of a partner. But on the other hand it seems that contrasts within certain limits have a tendency to attract each other. This is an old observation, which Kretschmer has found confirmed by an analysis of the temperaments of one hundred married couples. He says that "the more extreme, the more one-sided, the temperaments are, the more strongly do they prefer marriages of contrast."

Frequently, and among many peoples regularly, the person who marries has no choice in the matter or no previous knowledge of the other partner, and in such cases love or at least mutual love cannot, of course, have anything to do with the conclusion of the marriage. But even where there is perfect liberty of choice and the unmarried of both sexes have ample opportunity to become acquainted with one another, it very often happens that the choice of a wife or a husband is influenced neither by affection nor by beauty nor by any other sexual stimulant, but by factors of a totally different nature. Among uncivilised races fecundity is one of the qualities which a man most eagerly requires of his bride; this is a reason why pre-nuptial relations frequently have the character of a trial by which the man ascertains that the woman will gratify his desire for offspring, and marriage is not concluded before the birth of a child or until there are signs of pregnancy.

But a wife is also chosen with reference to her ability to perform the work incumbent upon her. As for modern European marriages, Bloch observes that the economic question is the main determining influence among the classes who feel it their duty to keep up a particular kind of appearance, namely, the aristocracy, the upper middle classes, and the officers in the army, and that the predominance of

mercenary marriages among the Jews is a well known fact. But he also asks, "Where are money marriages more frequent than they are among our sturdy German peasants?" Among the European peasantry economic equality between the parties is commonly considered an essential condition for the conclusion of a marriage.

While love is generally considered among ourselves as the proper motive for a marriage, it offers no guarantee for a happy married life; in fact marriages of reason are often more enduring than love-matches. Montaigne wrote: "I see no marriages where the conjugal intelligence sooner fails than those that we contract upon the account of beauty and amorous desires; there should be more solid and constant foundation, and they should proceed with greater circumspection; this furious ardour is worth nothing." This attitude towards marriage has still been largely preserved in France, where it is suitability rather than sexual passion that is regarded as the proper foundation for marriage. Van de Velde observes that quite a number of modern men and women have regretfully had to admit to themselves, during the course of their marriage, that the victory gained once over their parents' opposition has led to their own unhappiness.

Endogamous Rules

Society does not generally interfere with the choice of partner in any other way than by laying down rules which tell its members that there are certain people whom they are not allowed to marry. There are "endogamous" rules, which prohibit the members of a particular group from marrying any one who is *not* a member of the group, and "exogamous" rules, which prohibit the members of a particular group from marrying any one who *is* a member of the group. These two sets of rules are by no means contradictory, in so far as they refer to different groups of persons. Hence endogamy and exogamy occur

side by side with each other among the same people. Indeed, there is everywhere an outer circle out of which marriage is either definitely prohibited or considered improper, and an inner circle within which no marriage is allowed.

We hear of many races, savage and civilised, that refrain from, disapprove of, or actually prohibit marriage with persons belonging to another race. At various times Spaniards in Central America, Englishmen in Mauritius, Frenchmen in Réunion and the Antilles, and Danish traders in Greenland have been prevented by law from marrying natives. Before the War of Secession the civil code of Virginia described marriage with a negro as "an abuse for the dishonor of God and a shame of Christians," and punished it with death. We may say that probably every race considers it a disgrace, if not a crime, to marry within a race very different from its own, at least if it be an inferior one. This feeling is particularly strong with regard to its women. In the crosses between unequal human races the father in the vast majority of instances belongs to the superior race. "Woman," says M. de Quatrefages, "refuses to lower herself, man is less delicate."

Among many peoples marriage very seldom or never takes place outside the tribe or even some smaller division of it, as the clan or village. Habitual isolation, combined with antipathy felt against people with customs and manners and a language different from one's own, readily leads to disapproval or actual prohibition of intermarriage; and so does the desire of a tribe or community not to part with any of its members. Moses ordered the daughters of Zelophehad to marry men of their father's tribe, so that their inheritance should remain "in the tribe of the family of their father." But the reason given for the prohibition of intermarriage with seven Canaanitish nations was a religious one: "They will turn away thy son from following

me, that they may serve other gods." This Mosaic prohibition was, at any rate from Ezra onward, extended so as to include all the pagan nations of the country; and in the spirit of Ezra's ordinance, later religious authorities interdicted matrimonial connections between Israelites and all Gentiles. This prohibition is the established law of the Talmud and the Rabbinical Code; and although in the latter no special provision was made concerning intermarriage with Christians, these were actually included in the general prohibition of intermarriage with Gentiles.

In the nineteenth century this rule was changed by the Great Jewish Synod, convened by Napoleon in 1807, and by the Rabbinical Conference held at Brunswick in 1844, which resolved that the intermarriage of Jews and adherents of any of the monotheistic religions is not forbidden, provided that the parents are permitted by the law of the State to bring up their offspring in the Jewish faith. This decision, however, which abandoned the Talmudic standpoint, has been severely criticised even by pronounced advocates of reformed Judaism. No section of Jewish opinion favors marriages between parties who are not of the same religion.

Marriages between Christians and Jews were also prohibited by the Christians—by Constantine and later emperors and by various Councils. Owing to the intense Jewish hatred for the sacred name of Christ, the early Church was, in fact, more opposed to wedlock with Jews than with pagans. Marriages between Catholics and heretics were definitely prohibited in 1563, when the Council of Trent declared all matrimonial unions between Catholics and non-Catholics null and void, unless entered into before the ecclesiastical authority; but by degrees the popes felt constrained to make various concessions for mixed marriages. The Protestants, also, originally forbade such unions. Mixed marriages, however, are not now contrary to the civil law either in Roman Catholic or Protestant countries.

Islam has made religion a bar to intermarriage. The Koran says in ex-

PLICIT terms: "Marry not a woman of the Polytheists until she embraces Islam"; but it is also declared that such women as are of chaste reputation and belong to the Scriptural sects or believe in a revealed or moral religion are lawful to Moslems. On the other hand, a Mohammedan woman is in no circumstances permitted to marry a man who is not a Moslem.

Among the Hindus religion even forbids the intermarriage of persons belonging to different castes. Endogamy is the essence of the caste system. Nay, not only must a Hindu refrain from marrying outside the limits of his caste, but where, as is usually the case, the caste is divided into sub-castes, he must ordinarily not marry outside his sub-caste, although he may sometimes marry in certain sub-castes but not in others; and there may be some sub-castes from whom he may take a girl in marriage but to whom he may not give one. Where a caste is divided into sections of different status there may be hypergamy, or the rule whereby parents are obliged to marry their daughters into an equal or higher section, whereas the men may marry girls of their own or any inferior section.

Class endogamy is found among a large number of peoples in different parts of the uncivilised as well as civilised parts of the world. In Rome plebeians and patricians could not intermarry till year 445 B. C. Among the Teutonic peoples a freeman could not contract lawful marriage with a serf; and when nobility gradually emerged from the class of freeman as a distinct order, marriages between persons of noble birth and persons who, although free, were not noble came to be regarded as misalliances. Even now there are traces of the former class endogamy in Europe. But, as Sir Henry Maine remarks, the outer or endogamous limit within which a man or woman must marry has been mostly taken under the shelter of fashion or prejudice. "In France, in spite of all formal institutions, marriages between a person be-

longing to the *noblesse* and a person belonging to the *bourgeoisie* (distinguished roughly from one another by the particle 'de') are wonderfully rare, though they are not unknown."

Modern civilisation tends more or less to lower or pull down the barriers that separate races, nations, the adherents of different religions, and the various classes of society. It has, therefore, made the endogamous rules less stringent and less restricted, it has widened the limit within which a man or a woman may marry and generally marries. This process has undoubtedly been of great importance in the history of mankind. Largely originating in racial or national antagonism, class pride, or religious intolerance, the endogamous rules have, in turn, helped to keep up and strengthen these feelings; whereas frequent intermarriages may be assumed to have the opposite effect.

Exogamous Rules

The exogamous group, within which no intermarriage may take place, is in most cases composed of persons who are, or consider themselves to be, related by blood or of the same kin; and the nearer the relationship, the more frequently is it a bar to intermarriage, at least within the same line of descent. The most frequent of all exogamous rules are those which prohibit a son from marrying his mother and a father from marrying his daughter; these rules seem, in fact, to be universal.

Not much less universal is the rule which forbids marriage between a brother and sister who are children of the same father and mother. Some of the reported exceptions to this rule are obviously erroneous, and others are of a more or less doubtful character, if for no other reason because it is uncertain whether they refer to full brothers and sisters or to such as have only one parent in common. The best authenticated cases of customary brother-and-sister marriage are gen-

erally found in the families of kings or ruling chiefs, where they seem to be practised with the aim of preserving the purity of blood. From ancient Egypt there is plenty of evidence that later Pharaohs married their sisters or half-sisters, and the Ptolemies followed the precedent of the Pharaohs; but at least in the Roman age marriage of half-sisters and full sisters also occurred frequently in the families of cultivators of the soil and artisans, presumably as a method of keeping property, and especially landed property, together in the family. Marriage with a half-sister on the father's side is not infrequently permitted. It occurred, for instance, among the ancient Athenians and Semites; Abraham married his half-sister Sarah, the daughter of his father.

Marriages between uncles and nieces and between aunts and nephews are absolutely prohibited by various Western law-books; others allow the prohibition of them to be dispensed with; and in Germany there is no such prohibition at all. By Jewish law an uncle may marry his niece, though an aunt may not marry her nephew. Until quite recently marriage between first cousins was forbidden in a few European countries under the influence of ecclesiastical law.

In early times the Roman Catholic Church prohibited marriage within seven degrees, which were practically equivalent to seven generations; but the fourth Lateran Council, held in A. D. 1215, reduced the prohibited degrees to four, that is, marriage was permitted beyond the degree of third cousins, and since then there has been no change. Dispensation, however, is not only allowed, but has always been practised on a large scale. Marriage between cousins is permitted both by Jewish and Mohammedan law. In the Mohammedan world a man is frequently even held to have a right to wed the daughter of his father's brother, as was also the case among the ancient Arabs. Among various

peoples the most proper marriage is considered to be that between a man and his father's sister's daughter or his mother's brother's daughter, a so-called "cross-cousin marriage." This custom is very prevalent in the south of India.

Besides prohibitions of marriage between blood-relatives there are other prohibitions applying to marriage between relatives by alliance or affinity. The Levitical law and Islam, for instance, forbid marriage with two sisters simultaneously, and the Catholic Church forbids marriage with a deceased wife's sister, though the prohibition may be dispensed with. Such marriages were also condemned by the canon law of the English church; and, as is well known, it was only after many futile attempts and in face of very strong opposition that an Act legalising marriage with a deceased wife's sister in the United Kingdom was passed in 1907.

Among peoples unaffected by modern civilisation the exogamous rules are probably in the large majority of cases more extensive than among ourselves. They very often refer to all the members of the clan or "class" (in the sense used with reference to Australian and Melanesian exogamy), and are usually supplemented by a further prohibition of marrying nearly related persons belonging to another clan or class. The exogamous rules of the Australian aborigines, which have attracted much attention among anthropologists, are particularly complicated. Most of their tribes are divided into two, four, or eight matrimonial classes or sub-classes, the members of which are not allowed to marry within their own class or sub-class, and in many of these tribes a person can only marry into one particular sub-class. Moreover, in most of the Australian tribes known to us there is not only class exogamy, but clan exogamy as well, each class being subdivided into a number of exogamous totem clans. The exogamous rules among the Aus-

tralian natives are, or were until recently, enforced with the greatest rigidity, the penalty of death being commonly inflicted on the transgressors; and this is true both in the case of marriage and, generally, in the case of irregular sexual intercourse.

The division into exogamous clans or septs is found all over India; and in various tribes a man is not only forbidden to marry a woman of his own clan, but must also refrain from marrying in some other clan or clans, for example, that of his mother or grandmother. In China there is a rule of exogamy attaching to family names, which is a serious restraint on people's liberty of choice, since large bodies of persons in that country bear the same surname.

No problem relating to the history of marriage has led to a greater variety of attempted solutions than the origin of the exogamous rules. They have been ascribed to a pristine habit of female infanticide, to the vain desire of savage men to have trophies in their wives, to experience of the injurious influence of inbreeding (made at an earlier stage of human development than that represented by any living savages but afterwards forgotten), to marriage by capture originating in the hypothetical period of primitive promiscuity, to marriage by purchase, to a superstitious belief that incest blights the crops, prevents the multiplication of edible animals, and renders the women sterile, to totemism, to the furious jealousy of a gorilla-like ancestor who expelled his sons when they arrived at puberty, and so forth.

Grave objections may be raised to each of these theories, and there are other objections which may be raised to all of them. They regard the exogamous rules as social survivals from very remote ages. They suppose that these rules have originated in social conditions which no longer exist, or in ideas that have been found among a few savages only or have never been found anywhere. But it should be

noticed that they have not remained unaltered; on the contrary, they differ even among peoples of the same stock, and we know that in Europe, in the course of a few centuries, they have been greatly changed in spite of the religious sanction given them by the Church. This proves that the exogamous rules are not dead fossils, but living parts of the social organism, subject to modifications according to the circumstances. Moreover, the theories in question imply that the home is kept free from incestuous intercourse by law, custom, or education.

But even if social prohibitions might prevent unions between the nearest relatives, they could not prevent the desire for such unions. The sexual instinct can hardly be changed by prescriptions. It is doubtful whether all laws against homosexual intercourse, even the most draconic, have ever been able to extinguish the peculiar desire of anybody born with homosexual tendencies. Nevertheless, our laws against marriage between parent and child and between brother and sister are not felt as a restraint upon individual feelings. No attempts have, to my knowledge, been made to abolish them; they figure even in the Bolshevik law of marriage, which is the most liberal modern law of its kind. And the reason for this is that in all normal cases there is no desire for the acts which those laws forbid.

Generally speaking, there is a remarkable lack of inclination for sexual intercourse between persons who have been living closely together from the childhood of one or both of them. But such indifference is combined with sexual aversion when the act is thought of; I believe that this is normally the case whenever the idea of sexual relations occupies the mind with sufficient intensity and a desire fails to appear. An old and ugly woman, for instance, would in such circumstances become sexually repulsive to most men; and to many male inverts any woman, as an object of sexual desire, is not merely indiffer-

ent but disgusting. Now aversions which are generally felt readily lead to moral disapproval and prohibitory customs or laws. This I take to be the fundamental cause of the exogamous prohibitions. Persons who have been living closely together from childhood are as a rule near relatives. Hence their aversion to sexual relations with one another displays itself in custom and law as a prohibition of intercourse between persons who are near of kin.

The existence of the same peculiarity of the sexual instinct has been recognised by various writers as a psychological fact proved by common experience, and is attested by statements from different parts of the world; nay, among the lower animals, also, there are indications that the pairing instinct fails to be stimulated by companions and seeks strangers for its gratification. As I have shown elsewhere, a large number of facts testify that the extent to which relatives are forbidden to intermarry is connected with their close living together. But at the same time the members of an exogamous clan frequently do not live in the same locality. The exogamous rules, though in the first place associated with kinship because near relatives normally live together, have through an association of ideas, come to include relatives who do not do so.

In this process the influence of a common name has undoubtedly been of great importance: as kinship is traced by a system of names, the name comes to stand for blood-relationship. Sir James Frazer, followed by Freud, has argued against this theory of the origin of the exogamous rules that it is difficult to understand how a want of inclination for, and a natural aversion to, sexual intercourse between persons who have been brought up closely together from early youth could have been changed into an aversion to sexual intercourse with persons near of kin, leading to prohibitory rules against such intercourse. For my own part, I think that such a transition is

not only possible and natural but well-nigh proved by an exactly analogous case of equally world-wide occurrence and of still greater social importance, namely, the process that has led to the association of all sorts of social rights and duties with kinship.

The maternal and paternal sentiments, which are largely at the bottom of parental duties and rights, cannot in their simplest forms be based on a knowledge of blood-relationship, but respond to stimuli derived from other circumstances, notably the proximity of the helpless young, that is, the external relationship in which the offspring from the beginning stand to the parents. Nor are the so-called filial and fraternal love and the duties and rights which have sprung from these feelings in the first instance rooted in considerations of kinship, but they are ultimately due to close living together; and the same is the case with the tie that binds together relatives more remotely allied.

Men became gregarious chiefly by remaining in the circle where they were born; if, instead of keeping together with their kindred, they had preferred to isolate themselves or to unite with strangers, there would certainly be no blood-bond at all. Here, then, we have an immense group of facts which, though in the first instance depending upon close living together, have been interpreted in terms of kinship. Why may we not believe that the same has been the case with the aversion to incest and the prohibitory rules resulting from it?¹

¹ I think Freud should be the very last person to find it astonishing if the people who instituted the exogamous rules expressed psychological facts in terms of blood-relationship, considering that he himself has done exactly the same thing. The incestuous wishes of early childhood that he speaks of are really wishes directed towards persons who stand in certain external relationships to the children, which in normal cases coincide with the physiological relations between parents and offspring, but are intrinsically quite independent of any such relations. If, as he maintains, the son has a desire for sexual

It can be no matter of surprise that those rules so frequently refer to the marriage of kindred alone. Custom and law, naturally, only take into consideration general and well-defined cases, and therefore relationships of some kind or other between persons who are nearly always kindred are defined in terms of blood-relationship. In the case of the exogamous rules the social prohibition is often strengthened by superstitious beliefs. A transgression of it is supposed to be attended with all sorts of injurious consequences for the offspring or the guilty parents, or to involve the whole community in danger and disaster by causing epidemics, earthquakes, sterility of women, plants, or animals, or other calamities. Other forms of illicit love, such as adultery or fornication, are also believed to produce similar disastrous effects.

An important question may still be raised in the present connection: How shall we explain that peculiarity of the sexual instinct to which the prohibition of incest has now been attributed? It seems to me that the sexual instinct is of such immense importance for the existence of the species that any satisfactory explanation of its normal characteristics must be sought for in their specific usefulness; and I have made the suggestion that the lack of inclination for sexual intercourse—leading, when the act is thought of, to positive aversion—be-

intimacy with his mother and a daughter with her father, that is not because the former is borne by his mother and the latter begotten by his father, but simply on account of the parents' position in the family in relation to their children, which also may be occupied by persons who are not related to the latter by blood. In his discussion of the children's incestuous wishes Freud speaks repeatedly of their sexual love of their "fosterers" (*Pflegepersonen*), or of the child's feelings towards his "nurse" (*Amme*), "as a rule the mother." If Oedipus had followed Freud, his love and hate would have been directed, not to his mother Jocasta and his father Laius, but to his foster-mother and his foster-father Polybus.

tween household companions of childhood has a biological foundation in injurious consequences following unions of the nearest blood-relatives. That there very frequently are such consequences is admitted both by those biologists (and they are nowadays in the majority) who maintain that the bad effects of inbreeding depend exclusively upon the Mendelising-out of recessive developmental defects, and those who, like Baur, maintain that inbreeding also "for unknown reasons" weakens the offspring and reduces the capacity for reproduction.

We may suppose that in this, as in other cases, natural selection has operated, and by eliminating destructive tendencies and preserving useful variations, has moulded the sexual instinct so as to meet the requirements of the species. It must not be argued that marriages between cousins have proved too slightly injurious to produce such a selection. For if, as I maintain, the family consisting of parents and children prevailed as a social unit among our early human or semi-human progenitors, that peculiarity of the sexual instinct of which I am speaking would have grown up among them as a consequence of the harmfulness of unions between the very nearest relatives, unless indeed it was not an inheritance from a still earlier mammalian species. But once acquired, it would naturally show itself also in the case of more remote relatives or quite unrelated persons who lived in close intimacy from childhood, however harmless the unions between them might be. And through an association of ideas and feelings it might readily lead to the prohibition of sexual intercourse between individuals who did not live together at all.

Marriage by Capture

We shall now proceed to a discussion of the various modes of contracting a marriage. One is to take the woman by force without her own consent and without the consent of her

kindred, that is, marriage by capture.

This method of obtaining a wife has been found among uncivilised peoples in many parts of the world; in Australia it seems to occur more frequently than anywhere else. It has existed both among Semitic and Indo-European peoples. The Hebrews allowed members of the military class to marry foreign women taken in war, contrary to the law that forbade intermarriage with the Gentiles. Among the Hindus marriage by capture was permitted to the warrior caste by the sacred tradition. We are told that it once existed throughout Greece, and reminiscences of it are preserved in the traditions of the early Romans. The ancient Teutons captured women for wives in their wars; and though in their earliest written laws the "rape marriage" is a punishable offence, it is nevertheless a marriage. In the Irish Nennius we read of a rape of wives by the Piets from the Gael. Marriage by capture also occurred among the Slavs in former times, and among many Southern Slavs even in the beginning of the nineteenth century. In High Albania forcible capture of a girl occasionally takes place to this day, or at least did so quite recently.

At the same time, though widely spread, marriage by capture is not known to have been the usual and normal mode of contracting a marriage anywhere; even among the Australian aborigines it is said to be merely an exceptional or occasional method of acquiring a wife. Generally speaking, it is chiefly practised as an incident of war or as a way of acquiring a wife when it is difficult or inconvenient to get one in the ordinary manner. We thus notice its occurrence among savages living in small groups of related individuals, like the Fuegians and various Brazilian tribes; in the Australian tribes, where young men often, for various reasons, find it very hard to get married; and among many peoples of a higher type as a substitute for marriage by purchase, by

which a man tries to lower the price of the bride or to avoid payment altogether. Custom may require that the matter shall be settled afterwards with the parents of the kidnapped girl, and in such cases the capture is rather a preliminary to marriage than a mode of contracting it.

It has often been assumed that marriage by capture was at one time the normal mode of procuring a wife among uncivilised peoples, but we have no reason to believe that it was so. Savages do not usually live at odds with all their neighbors; among many of them wars are quite exceptional, and some of them are said to have no wars at all. It seems extremely improbable that there ever was a time when friendly relations between families who could intermarry did not exist.

The theory of an early stage of marriage by capture has been supposed to derive support from some widespread customs which have been interpreted as survivals of capture in the past. But these customs do not prove what they are meant to prove, because they may be much more readily explained otherwise.

First, there are a large number of cases in which sham fighting between the bridegroom or his party and the bride's family, or some other kind of resistance, forms part of the wedding ritual. In many European countries, and elsewhere as well, it is a common custom to barricade or stop the bridal procession on its way, and this has also been regarded by several writers as a survival of marriage by capture. The barring of the wedding procession with a cord is found in Gloucestershire and Wales. But in former times and, in fact, until recent years, the Welsh bridegroom met with more serious resistance. When, on the morning of the wedding day, he and his friends demanded the bride, her friends gave a positive refusal, and a mock scuffle ensued. Mounted behind her nearest kinsman, she was carried off and pursued by the groom and his party with

loud shouts, until, at last, he was suffered to overtake her, and led her away in triumph.

The mock capture of a bride occurred a century ago in some parts of Scotland and Ireland as well. Some customs of this class may, no doubt, have been suggested by genuine capture of the bride; but this does not imply that capture was ever the usual mode of contracting a marriage. In a warlike tribe the capture of a woman for wife from an alien tribe may be admired as an act of bravery and therefore playfully imitated by ordinary people at their weddings. But in most cases it seems that the ceremonial resistance of the girl's relatives is a symbolic expression of their unwillingness to give her up, or of their feeling of sexual modesty, which may be remarkably strong among simple peoples and is particularly felt with regard to the nearest relatives. The parents' reluctance, real or feigned, to give away their daughter shows itself in various ways.

Very often resistance is made, or grief expressed, principally or exclusively by the bride, and this, also, has been represented as a survival of earlier marriage by capture. The ceremonial reluctance of the bride or crying of the bride is found among all Indo-European peoples. Crying was an essential form at an ancient Hindu marriage, and is still so in modern India. The Roman bride fled to the lap of her mother, and was carried off by force by the bridegroom and his friends. In Germany it is a general belief that the bride's crying is auspicious, that if she weeps during the marriage ceremony she will be happy in her married life. But the resistance and weeping of the bride can no more than the opposition made by her relatives be regarded as a survival of capture. As her relatives are naturally reluctant or sorry to part with her, so she is sorry to be separated from them; and in either case the feeling of sadness or grief is ceremonially expressed

and emphasised at the wedding. But the behavior of the bride is also largely due to coyness or sexual modesty, real or assumed. This feeling shows itself in various ways in the preliminaries to, or the conclusion of, a marriage not only on the part of the woman but also on the part of the man; and the bridegroom, too, may have to be captured, as he is among the Garos of Assam and the Greeks of Southern Macedonia.

Many other practices have been regarded by imaginative writers as relics of marriage by capture, although they have not the faintest claim to be in any way associated with it; for instance, the veiling of the bride, the avoidance of parents-in-law, and even our honeymoon, "during which the bridegroom keeps his bride away from her relatives and friends."

Consent as a Condition of Marriage

A marriage concerns not only the contracting parties, but other individuals as well. Hence the conclusion of it may require the consent of the latter, or even be arranged by them; and, on the other hand, the consent of the bride or the bridegroom or both may be dispensed with.

The practice of infant- or child-betrothals, for which the consent of the parties is out of the question, is widely spread among uncivilised peoples; but often enough the betrothal is not considered binding on either party, or is regarded as binding on the female only. Among not a few of those peoples marriage contracts are concluded by the parents even when the children are grown-up.

Much more frequently than the young man is the young girl dependent upon somebody else's will in the choice of a partner. I think we may safely say that among most savages she is in her father's power till she marries; but in various cases the consent of a mother, brother, or maternal uncle is regarded as particularly essential to her marriage. Yet the neces-

sity of the father's or somebody else's consent by no means implies that the girl is, or can be, given in marriage against her own will. A large number of statements relating to savages in different parts of the world show that the consent of the woman to her marriage is very frequently not only asked as a matter of fact, but even required by custom.

It is interesting to notice that her liberty in this respect—if the Australian aborigines are excepted—is decidedly greater among the lowest savages than among the more advanced ones. Progress in economic culture has led to marriage by purchase, which naturally tends to restrict her liberty; but by leading to accumulation of property and the distinction between richer and poorer people, such progress also increases the interest which the family takes in the marriage of its members, and makes its head less willing to allow individual inclinations to have their free play.

When passing from the savage and barbarous races of men to the peoples of archaic civilisation, we find paternal, or parental authority and the submission of children at their height. The idea that filial piety is the fundamental duty of man has up to our days dominated the Chinese legislation relating to the family. No person, of whatever age, can act for himself in matrimonial matters during the lifetime or in the neighbourhood of his parents or near senior kinsfolk.

The importance which the ancient Hebrews attached to the duties of a child to his parents may be learned at once from the placing of the law on the subject among the Ten Commandments, and from its position there in the immediate proximity to the commandments relating to the duties of man towards God. A father had unlimited power to give his daughters in marriage and he also chose wives for his sons, the selection, however, sometimes being made by the mother; and there is no indication that the sub-

jection of sons ceased after a certain age.

Among the ancient Romans, in relation to the house-father, "all in the household were destitute of legal rights—the wife and the child no less than the bullock or the slave." Even the grown-up son and his children were subject to the house-father's authority, and his consent was indispensable to the marriage of children, sons and daughters alike. There is no evidence that a sovereignty as great as that which the Roman house-father exercised over his descendants of all ages ever prevailed among any other Indo-European people.

Among the Greeks and Teutons the father's authority over his son came to an end when the latter grew up and left his home, and a grown-up son might choose his own wife. But the father had the right to give away his daughters in marriage without consulting their wishes, and it was frequently the lot of a Greek woman to be given in marriage to a man whom she did not know. Nor has it been shown that the paternal power of the Roman type ever existed in full in India; but the father's or the parents' authority has been and still is, very great among the Hindus, and filial piety is a most stringent duty in a child. According to their present customs, parental consent to a child's marriage is essential in the case of a girl, and in the case of a boy it is considered necessary on a first marriage and always advisable.

In Europe the paternal authority of the archaic type has gradually yielded to a system under which the father has been divested of the most essential rights he formerly possessed over his children—a system the inmost drift of which is expressed in the words of the French Encyclopædist: "*Le pouvoir paternel est plutôt un devoir qu'un pouvoir*"—"The paternal power is an obligation rather than a power." Even in pagan times the authority of the Roman house-father was subject to important restrictions; and under the

jurisprudence of Justinian he could not force his son or daughter in marriage, though his consent remained essential to the validity of the marriage of any one under his power, irrespective of age.

Canon law adopted the principle that no marriage can be concluded without the consent of the persons who marry; but as a consequence of its doctrine that marriage is a sacrament, it ruled that however young the bridegroom or bride may be, the consent of their parents or guardians is not necessary to make the marriage valid. The Church certainly disapproved of marriages contracted without such consent, and the lack of it rendered the marriage illicit, but it did not render it null and void.

Luther and other reformers were of a different opinion: they maintained that a marriage contracted without the consent of parents should be regarded as invalid, unless the consent was given afterwards. This principle was gradually accepted by most legislators in Protestant countries, but with the modification that parental consent could be refused for good reasons only and, in case of need, the consent of the authorities could take its place.

In Roman Catholic countries, also, the canonical doctrine met with opposition; legislators declared parental consent to be necessary for the validity of a marriage, and no appeal could be made in the case of refusal. According to the French "*Code Civil*," a son under twenty-five and a daughter under twenty-one could not, until 1907, marry without the consent of the parents; while the present law of France allows a son, as well as a daughter, of twenty-one to marry without it. Yet between the ages of twenty-one and thirty the parties must still ask for parental consent, although if this is refused it can be regulated by means of an act before a notary, and in case the consent is not given within thirty days the marriage can take place without it.

In England, by the common law, the marriages of minors who had attained the age of consent—fixed at fourteen years for males and twelve years for females—were valid without the consent of parents until the year 1753, when Lord Hardwicke's Marriage Act declared such marriages void. According to the present law of England, "where a person, not being a widower nor widow, is under the age of twenty-one years, the father, if living, or, if he is dead, the guardian or guardians, or one of them, or if there is no guardian lawfully appointed, then the mother, if she has not remarried, has authority to consent to his or her marriage; and such consent is required except where there is no person having authority to give it."

Yet the marriage of a minor without the requisite consent is not invalid; but there may be forfeiture of all the rights and interest in any property accruing to the offending party by force of the marriage. In Scotland, on the other hand, no consent of parents or guardians is required even of minors who have attained the age of puberty; and by the common law of the United States, which was not affected by Lord Hardwicke's Marriage Act, the marriage of minors without the parental consent is likewise good. There are "statutes which forbid the celebration of the nuptials of minors without permission from the parent or guardian; but, in the absence of a clause of nullity, which most of them do not contain, a marriage in disobedience is valid, while yet the participators in it may be subject to a penalty or punishment" (Bishop).

Marriage by Consideration

Among the lower races consent to the contraction of a marriage is not generally given for nothing. In most cases some consideration has to be offered to the father or other relatives of the bride, either in the form of the exchange of bride for bride, or of serv-

ice, or of the giving of property of some kind or other.

Among the Australian natives the exchange of girls seems to be the most common way of concluding a marriage, presumably on account of the unusual difficulty in getting a wife in any other way where rigorous class and clan rules so greatly restrict the circle within which a man is allowed to marry. In other parts of the world the same practice is mostly found side by side with marriage by ordinary purchase, as an economic measure intended to save the bride price.

More widespread is the custom of obtaining a wife by services rendered to her father. This practice, with which Hebrew traditions have familiarised us, is common among many of the simpler peoples. Generally the man has to go and live with the family of his future spouse for a certain period, which seldom lasts less than a year but may even last as many as twelve or fifteen years, during which he works as a servant. In many cases marriage by service is a substitute for ordinary purchase; but it may also be intended to test the young man's ability to work and to show whether he is an acceptable husband and son-in-law. Most frequently the consideration given for a wife consists of property of some kind or other.

In the lowest tribes the amount is very inconsiderable, and among many uncivilised peoples of a higher type the consideration is likewise of small value. It is often represented as a gift only, as an expression of goodwill or respect on the part of the bridegroom. That the giving of a consideration for a wife is by no means always an act of purchase is also obvious in cases where the bride's people have to present the bridegroom or his people with a return gift. The exchange of presents at a marriage is a very widespread practice, and among many tribes it is the rule that the consideration given for a wife shall be returned in a present of equal value,

may, sometimes the return gifts exceed the original gifts.

At the same time we often find that, with the advance of economic culture, the consideration assumes such an importance as to make the conclusion of a marriage a genuine business transaction. But even in these cases it must not be supposed that the girls are sold by their relatives like chattels. The man can only "buy" the rights which custom grants to the husband, and however great these rights may be, we may safely say that they never are quite absolute, and that among no people a married woman is completely at the mercy of her husband.

Marriage by consideration is not only the normal mode of contracting a marriage at all grades in the uncivilised world, but is also found among peoples who have reached a higher degree of culture. It has prevailed in all branches of the Semitic race. One of the eight forms of marriage mentioned by Manu, the mythical Hindu legislator, was marriage by purchase; he admits that some allowed the two lower castes to practise it, but he himself forbade it altogether. In spite of this prohibition it is found to this day even among high castes, and is frequently practised among the low castes. In Greece, in heroic times, a suitor gave cattle to the father of the bride-elect, and a maid was called by a term which meant one who yields her parents many oxen as presents from her suitor. Marriage by purchase cannot with equal certainty be established as a form of marriage on Roman soil, but a reminiscence of it is supposed to have been preserved in the symbolical process of *coemptio*, which was the ordinary mode of contracting a marriage in Rome.

Marriage by consideration was a custom of all Teutonic peoples. Originally, we may presume, the amount of money paid down by the bridegroom depended on agreement, but during the period of the law-books, both in England and on the Continent, it was

generally fixed by custom and by statute. The Kentish law of King Aethelbirht speaks of a man buying a maiden with cattle, and the transaction is called a "bargain." In Germany the expression "to purchase a wife" was in use till the end of the Middle Ages, and in Holland the bride is still, in the language of the common people, represented as *verkocht*, that is "sold." But here again we should notice that marriage by purchase did not imply the purchase of a piece of property: the ancient Teutonic peoples bought the *mund*, or protectorship over the woman and other rights which marriage conferred on the husband. The ancient Celts paid a price for their brides, and so did the Slavs. In Serbia, at the beginning of the nineteenth century, the price of girls reached such a height that one of their princes limited it to one ducat.

Gifts to the Bride

Among the peoples of culture marriage by consideration has in the course of time been subjected to various modifications, and has led to institutions totally different from the original practice. The general trend of this process is that the parents of the woman more or less lose the economic advantages they derived from her marriage, and that greater regard is paid to the interests of the contracting parties. Here, also, we meet with the practice of offering a return gift, which, in some cases at least, seems to be a mitigation of marriage by purchase.

Gifts are offered to the bride by the bridegroom; and although these gifts no doubt may have an independent origin, they may also be a survival of the old bride price. And in many cases the price paid for the bride, instead of being appropriated by her parents or guardian, became wholly or in part her own property. In Semitic countries the bridegroom offered a gift to the bride, but over and above this gift the bride price, or a part of it,

became in the course of time her property.

To this day the custom of the husband providing the wife with a dowry is found both among the Jews and Mohammedans; the Koranic law presumes that the money handed over to the father of the bride shall belong to her. A similar transformation of the bride price took place among the Indo-European peoples, as is indicated in their languages by the fact that the words used for it subsequently assumed the meaning of dowry. "When light begins to fall upon the Anglo-Saxon betrothal," say Pollock and Maitland, "it is not a cash transaction by which the bride's kinsmen receive a price in return for rights over their kinswoman; rather we must say that the bridegroom covenants with them that he will make a settlement upon his future wife. He declares, and he gives security for, the morning-gift which she shall receive if she 'chooses his will' and the dower that she shall enjoy if she outlives him."

From marriage by consideration we have thus reached the practice of providing the bride with a marriage portion, which in part consists of the price for the bride. The marriage portion serves different ends, often indissolubly mixed up together. It may have the meaning of a return gift. It may imply that the wife as well as the husband is expected to contribute to the expenses of the joint household. It is very often intended to be a settlement for the wife if the marriage is dissolved through the husband's death or otherwise. But as in such cases the husband generally has the usufruct of the portion as long as the marriage lasts, it may be a return gift to the man at the same time as it is a settlement for the woman. And it may also be a means of buying a husband.

The marriage portion assumed great importance in ancient Greece, where it became almost a criterion of honourable marriage as distinguished from concubinage; and in Rome, even more

than in Greece, it became a mark of distinction for a legitimate wife. A woman had a legal right to demand a *dos*, or dower, from her father, but it was to be given to her husband as a contribution towards the defrayal of the expenses of the joint household, although it was also intended as a provision in the interests of the wife. According to the ancient law the husband was the recognised owner of the *dos* even after the dissolution of the marriage; but Justinian restricted his right to the use and the fruits of the dower to the time during which the marriage lasted.

This principle passed into the later European legislation on the subject; the dotation remained the property of the wife, although the husband administered and had the use of it. For a long time—according to some laws still in the beginning of the nineteenth century—a daughter was entitled to demand a dowry at her marriage. And although parents are no longer legally bound to provide their daughters with a marriage portion, there is still a strong feeling, especially among Latin peoples, in favour of dotation. This feeling is a potent cause of those habits of saving and hoarding that characterise the French people, and is probably descended, by a long chain of succession, from the obligatory provisions of the Roman law.

The marriage portion has not infrequently become a means of buying a husband for one's daughter, as formerly a man bought a wife from her father. In India the difficulty of finding a husband has led to undisguised purchase of bridegrooms. While the low castes ordinarily pay for the bride, the high castes pay for the bridegroom; and in some cases very large sums are paid, especially where hypergamy prevails, that is, where girls must marry in a caste equal or superior to their own. In recent times the bridegroom price has been affected very largely by the educational qualifications of the bridegroom.

Marriage Rites

Even when the consent which is necessary for the conclusion of a marriage has been given and other conditions mentioned above have been fulfilled, some ceremony may still be required to make the union valid or the marriage, from the legal point of view, complete. But besides the ceremony that is indispensable for the conclusion of a valid marriage, other rites are often observed in accordance with old-established custom, which, however playful they may appear at present, originally were, or still are, anything but empty formalities.

The most general social object of marriage rites is to give publicity to the union. In order to be recognised as valid, it may have to be sanctioned by an official, or, as is the case under the Mohammedan Sunnī law, be entered into in the presence of witnesses. In Teutonic countries a marriage was formerly considered legally valid only when it could be proved that the couple had been together under the same blanket; and this custom has survived to quite modern times. An extremely frequent method of giving publicity to the union is to celebrate it with feasting, the guests being, in a way, regarded as witnesses.

The various marriage rites are performed for many different purposes. Some of the most frequent ones symbolise the union between the parties or, rather, are originally intended to strengthen the marriage tie through an act supposed to possess magical efficacy. First, there is the joining of hands, which has of old been one of the most important marriage rites among all Indo-European peoples; and in some European countries and in many parts of India the hands of the bridal pair are not only joined, but tied together. The union between the bride and bridegroom may also be represented by the tying of something to each separately; and it seems that betrothal and wedding rings, partly at least, serve a similar purpose. The

wedding ring was in use among the ancient Hindus, and the betrothal ring in ancient Rome, where the man presented it to his fiancée. The same custom prevailed in Christian Europe throughout the Middle Ages and later, but was subsequently as a rule succeeded by an exchange of rings. Various superstitions connected with the marriage ring indicate that it is regarded as a symbolic tie between the couple. To lose it or break it means death or the dissolution of the union or some other misfortune.

An extremely frequent and widespread marriage rite, which is found both among savage and civilised peoples, is the eating together of bride and bridegroom, usually from the same plate or dish, or of the same loaf of bread, or with the same spoon. There can be no doubt that it was originally something more than a mere symbol. In Sweden there was a popular belief that if a girl and a youth ate off one morsel, they would fall in love with each other; and in Germany it is supposed that if the couple eat the "morning soup" with the same spoon, they will have a peaceful married life. There is also the rite of drinking together, which occurs in Europe from Italy to Norway and from Brittany to Russia. It forms part of the nuptial ceremony among the Jews of all countries. In Japan bride and bridegroom drink wine together, exchanging cups nine times, and this constitutes the entire ceremony.

There are various rites that are intended to ensure or facilitate the consummation of the marriage. Eggs, earthenware vessels, or objects of glass are often ceremonially broken at weddings in Europe, Morocco, and elsewhere. This custom is found in some parts of England and Scotland. At the German *Potterabend*, which is celebrated on the eve of the wedding day, all sorts of old pottery are broken outside the bride's house. Up to the present day the breaking of a glass has remained one of the most charac-

teristic features of Jewish weddings; the bridegroom breaks it with his foot, or it is broken by the Rabbi. Various fanciful explanations have been suggested for this ceremony, but its true meaning, as I understand it, has to my knowledge never been recognised. Many facts strongly suggest that both this and other rites consisting in the breaking of some fragile object were intended, in accordance with the principle of homeopathic magic, to ensure the consummation of the marriage, which in Europe and elsewhere has been supposed to be impeded by the sorcery of rivals or other malign influences. That this intention has generally been more or less disguised is not to be wondered at, considering the nature of the subject; but among some of the Southern Slavs it is stated with a frankness which leaves no room for doubt. Among several peoples a staff or rod or tree is broken, presumably with a similar object in view. It also seems probable that the red color, which is so frequently used in marriage rites, is regarded as a means of ensuring defloration, and not only as a sign of virginity, as is sometimes said. In Greece and Rome the nuptial bed was covered with red cloths; and in a little town in Finland the bridal blanket must be red "in order that the bride shall be happy."

Many rites are practised with a view to making the wife fruitful or a mother of sons. Among the country folks of Sweden there is a belief that the bride should have a boy baby to sleep with her on the night preceding the wedding day, in order that her first-born shall be a son; and among Slavonic peoples a boy is put to sit on her lap. The same custom prevailed in ancient India, and may therefore have belonged to the primitive Indo-European marriage ritual. Another marriage rite, to be mentioned in the present connection, which has been traced to the early Aryans, is the custom of throwing some kind of cereals or fruit on the bride.

This practice, or that of throwing grain or fruit on the bridal pair or on the bridegroom separately, or even on the wedding company, has been found to prevail from India, Indo-China, and the Malay Archipelago in the East to the Atlantic Ocean in the West. In England other things than rice were formerly, or are still in some places, thrown upon the bride, apart from the modern adoption of confetti. In the seventeenth century wheat was cast on her head when she came from church; and in the north of England a plateful of shortbread is thrown over her head. Customs of this sort have generally been regarded as means of securing offspring, in accordance with the principle of sympathetic magic, grain or fruit being a source of fertility. But though it is evident that they in certain cases are looked upon in this light by the people who practise them, they are also said to be means of ensuring prosperity.

There are many marriage rites through which one of the partners tries to gain mastery over the other; the long battle for supremacy begins at the wedding. In Croatia the bridegroom gives the bride a box on the ear. Among all Slavonic peoples it is, or was, the custom for the bride to pull off the bridegroom's boots, and in Russia the latter used to beat her on the head with the boot-leg. But the bride also knows how to gain power over her man. In Morocco she mounts the ram that is to be slaughtered for the wedding, the ram representing the husband. In many parts of Germany, when the clergyman joins the hands of the couple, the bride tries, in a literal sense, to get the upper hand, but the bridegroom tries to do the same, and a struggle of hands ensues, which is settled by the clergyman placing the man's hand uppermost.

Besides rites that are supposed to confer positive benefits upon bride or bridegroom, or both, there are others that are intended to protect them from evil influences or rid them of such in-

fluences. There is a very general feeling or idea that bride and bridegroom are in a state of danger, being particularly exposed to other persons' magical tricks or evil looks; to the attacks of evil spirits, or to some impersonal mysterious cause of evil, and therefore stand in much need of protection or purification. This is professedly a reason for the gun-fire which is a frequent practice at country weddings in Europe and elsewhere; and the same may be said of the terrific noise or loud music which so often forms a part of the marriage ritual.

In Mohammedan countries the bridegroom often carries a sword, dagger, or pistol, or swords are crossed over his or the bride's head; and in various parts of Germany the bridesmen protect the bride with drawn swords. Among Mohammedan and Indo-European peoples it is, or has been, an essential preparation for a wedding that the bride, or the bridegroom also, shall have a bath. There may of course be other than superstitious reasons for this, but the ceremonial character of the act certainly suggests a purificatory origin.

There are, further, rites that are intended to safeguard bride or bridegroom by deception. The bride may be represented by a substitute, who is supposed to serve as a dummy to attract the attention of the demons or to catch the envious glance of the evil eye, and so allow the real bride to escape unhurt. Among Slavonic, Teutonic, and Romance peoples it is a common custom that when the bridegroom or his representative comes to fetch the bride from her home, a false bride is substituted for the real one, another woman, frequently an ugly or old one or a little girl, or even a man, being palmed off on him as the bride. In India mock marriages with things or trees or animals are often resorted to for the purpose of averting some dreaded evil from the bride or bridegroom or both. There are further cases in which the bridegroom or the

bride is sheltered by some persons who are dressed up to resemble him or her, so that there apparently are two or more bridegrooms or brides.

The bridesmaids may be dressed exactly as the bride; this is said to be the case in Bedford, and I am told that it has been the custom also elsewhere in England. The functions of bridesmaids, bridesmen, and groomsmen have been not only to attend upon bride and bridegroom, but also to protect them from evil influences; people always feel safer in company. In Shetland the best man must sleep with the bridegroom during the night before the wedding. An effective method of protecting the bride against external influences, particularly the evil eye, is to shut her up in a cage when she is to be taken to her new home on the back of an animal, as is done in the north of Morocco.

In the Mohammedan world in general she is taken there with her face well covered. The veiling of the bride is referred to in Genesis. It has been common in Europe, and the importance which the Romans attached to this custom appears from the ordinary use of the word *nubere* or *obnubere* to denote a woman's marrying. Its primary object was in all probability to safeguard the bride from the evil eye.

Bride and bridegroom have to be protected against dangers from above. Jewish marriages are celebrated under a canopy. In the Scandinavian countries, England, and France, a square piece of cloth—in English called "care cloth"—was held over the bride and bridegroom at the benediction. But they must also be protected against dangers from below. In Morocco the bridegroom must avoid sitting on the ground, in order not to be affected by evil influences, and on certain occasions he is carried by his best man or other bachelor friends. The bride is frequently carried, and this is expressly said to be connected with the idea that she must not put her foot on the bare ground. To carry her

over the threshold is a very common practice, the threshold being a particularly haunted place.

In England there was "a custom at marriages of strewing herbs and flowers, and also rushes, from the house or houses where persons betrothed resided to the church"; in Sunderland the footpath of the street along which the bride must pass in order to be married at the church is sprinkled with sawdust. The red carpet at weddings is familiar to us all.

Fear of dangers threatening bride and bridegroom from below may also be the origin of the custom of throwing an old shoe or old shoes after them, which is found in England, Scotland, and some other parts of Europe. Various facts have suggested to me that the old shoe was originally meant to serve them as an extra magical protection on their way, in addition to the shoes or boots they wore. In Scotland it was the custom to wish brides and bridegrooms "a happy foot."

The protective or purificatory practices which play such an important part at marriages in all quarters of the world raise the question. Why are bride and bridegroom supposed to be in a dangerous condition? One reason for it is that they enter into a new state; the wedding is, to use a phrase coined by M. van Gennepe, a *rite de passage*, and to pass into a new condition or to do a thing for the first time is not only in this, but in many other cases, considered to be attended with danger. Those rites depend in a large measure on the circumstance whether the bride or bridegroom has been married before or not, being omitted in the case of a bridegroom who has or has had another wife, and at all events much reduced in the case of a bride who is a widow or a divorced wife. But it must, in addition, be noticed that in the present instance the nature of the act itself, which is sanctioned by the wedding, is apt to increase the supposed peril. It is a very wide-

spread idea that sexual intercourse is defiling and in certain circumstances a mysterious cause of evil.

Besides marriage rites that are purely magical, there are others of a religious or semi-religious nature, often performed by a priest, which are also intended either to bestow positive benefits on the couple or to protect them against evils. They are found both among some savages and in ancient Indo-European marriage rituals. It has been assumed that among the Christians the celebration of marriage was from the very first accompanied with suitable acts of religious worship, though the founder of Christianity did not prescribe any particular ceremonies in connection with it. The dogma that marriage is a sacrament gradually developed in the Church, but marriage without benediction was nevertheless regarded as valid till the year 1563, when the Council of Trent required that it should be celebrated by a priest in the presence of two or three witnesses. In Protestantism marriage ceased to be thought of as a sacrament, but continued to be regarded as a divine institution; and sacerdotal nuptials became no less obligatory on Protestants than on Catholics.

It was the French Revolution that first gave rise to an alteration in this respect. In 1791 it was declared that the law regards marriage only as a civil contract to be established by means of a civil act. To this obligatory act a sacerdotal benediction may be added, if the parties think proper. Since then civil marriage has gradually obtained a footing in the legislation of most Christian countries, although in many of them the parties may choose the religious or the civil act as they like, both making the marriage valid by law. The legal importance that has been attached to the religious ceremony in Christian countries has no counterpart either in Jewish or Mohammedan law.

Monogamy and Polygyny

The number of wives or husbands whom a man or a woman may have varies among different peoples. There are marriages of one man with one woman (monogamy), of one man with several women (polygyny), of several men with one woman (polyandry), and of several men with several women (group-marriage).

Among the uncivilised races polygyny is not practised on a large scale by any of the lower hunters and food-collectors, except some Australian tribes and some South African Bushmen, nor by any agriculturists of the most primitive type. On the other hand, a considerable number of these hunting and slightly agricultural tribes are said to be strictly monogamous. Among the higher hunters, most of whom are found in North America, polygyny is more frequent, although in the majority of their tribes it is practised only occasionally; and exclusive monogamy is very rare, though perhaps not unknown.

Among pastoral peoples I have found none that can be regarded as strictly monogamous, and both among them and the higher agriculturists polygyny is undoubtedly more frequent than among the hunters and most primitive agriculturists. This is particularly true of African tribes. It is in Africa that we find polygyny at its height, both in point of frequency and so far as the number of wives is concerned. The wives possessed by the King of Benin have been said by different writers to number 600, 1,000, or 4,000, but he gave some away to men who had served him well. King Mtesa of Uganda and the King of Loango are asserted to have had 7,000 wives. This is, to my knowledge, the high-water mark of polygyny anywhere.

Where polygyny occurs it is the general rule that one of the wives holds a higher position than the rest or is regarded as the principal wife, and in most cases it is the first married

one to whom such a distinction is assigned, presumably because monogamy is, or formerly was, the rule among the people and polygyny either a novelty or an exception. The difference between the position of the first wife and that of the subsequent ones is not infrequently so great that our authorities represent the former as the only real or legitimate wife and the others as concubines; but in many or most of these cases we are probably justified in regarding the marriage as polygynous and the concubines as inferior wives, if the term concubinage is restricted to relations that only imply sexual licence.

Polygyny or a sort of concubinage hardly distinguishable from genuine polygyny is found among most peoples of archaic civilisation. In China there are besides the legal wife so-called wives "by courtesy" or lawful concubines; whereas the law forbids the taking of a wife, in the full sense of the term, during the lifetime of the legal one. In Japan concubinage of the Chinese type existed as a lawful institution until it was abolished with the promulgation of the Criminal Code of 1880; but the long-established custom still lingers to some extent.

Among the ancient Hebrews there was no difference in the legal status of different wives, although a distinction was made between a wife and a slave-concubine; nor was there any limit to the number of wives a man might take. Among European Jews polygyny was still practised in the Middle Ages, and among Jews living in Mohammedan countries it is found to this day. In Arabia Mohammed set a limit to the number of wives a man might possess, by ordaining that his legal wives should be not more than four, though he might enjoy as concubines any number of slaves he was able to possess. Where two or more wives belong to one man, the first married generally enjoys the highest rank and is called "the great lady." But as a matter of fact the large majority of men in Mo-

hammedan countries—as in most, if not all, other countries where polygyny is allowed—have only one wife at a time.

Polygyny has been practised, though only to a small extent, among most Indo-European peoples. Among the Vedic Indians it was probably as a rule confined to kings and wealthy lords. At the present day the Hindu law places no restriction upon polygyny, but most castes object to their members having more than one wife, except for special reasons, such as the failure of the first wife to bear a son, or her infliction with some incurable disease or infirmity. Polygyny occurred in Slavonic and Teutonic countries, at least among chiefs and nobles.

There is no direct evidence of it among the Anglo-Saxons, but it cannot have been entirely unknown to them, as it is prohibited in some of their law-books. Among the ancient Irish we sometimes find a king or chief with two wives. There can be little doubt that monogamy was the only recognised form of marriage in ancient Greece, though concubinage existed in Athens at all times and was hardly censured by public opinion. Roman marriage was strictly monogamous.

Considering that monogamy prevailed as the only legitimate form of marriage in Greece and Rome, it cannot be said that Christianity introduced obligatory monogamy into the Western world. Indeed, although the New Testament assumes monogamy as the normal or ideal form of marriage, it does not expressly prohibit polygyny, except in the case of a bishop and a deacon. No Council of the Church in the earliest centuries opposed polygyny, and no obstacle was put in the way of its practice by kings in countries where it had occurred in the times of paganism. In later times Philip of Hesse and Frederick William II. of Prussia contracted bigamous marriages with the sanction of the Lutheran clergy; nay, in 1650 soon after the Peace of Westphalia, when

the population had been greatly reduced by the Thirty Years' War, the Frankish *Kreistag* at Nuremberg passed the resolution that thenceforth every man should be allowed to marry two women. Certain Christian sects have advocated polygyny with much fervour. In 1531 the Anabaptists openly preached at Munster that he who wants to be a true Christian must have several wives. The Mormons urged the duty of polygyny upon men as a means of securing eternal salvation.

A frequent cause of polygyny is undoubtedly an excess of marriageable women, and a frequent cause of monogamy a comparative scarcity of them. I think we may safely say that whenever there is a marked and more or less permanent majority of women in a savage tribe polygyny is allowed. But although an excess of females leads to polygyny it is never the sole or complete cause of it. While the existence of available women facilitates polygyny or makes it possible, the direct cause of it is generally the men's desire to have more than one wife. There are various reasons for this desire. Among a great number of simple peoples monogamy requires of a man continence for periods of considerable length. He has to abstain from his wife not only for a certain time every month, but during her pregnancy or at least during the latter stage of it, since a pregnant woman is considered unclean, and after child-birth until the child is weaned; and the latter injunction is the more serious as the suckling-time often lasts for two or three and occasionally even five or six years, chiefly owing to want of soft food and animal milk.

One of the main causes of polygyny is the attraction that female youth and beauty exercise upon the men; a fresh wife is often taken when the first grows old. A further cause is man's taste for variety; the sexual instinct is dulled by long familiarity and stimulated by novelty. A man may also wish to have more than one wife because he is desir-

ous of offspring. The barrenness of a wife, or the birth of female offspring only, is one of the principal causes of polygyny in the East. The polygyny of the Hindus is chiefly due to the dread of dying childless. Many Persians and modern Egyptians take a fresh wife only when the first one fails to give them offspring. And polygyny is practised as a means not only of obtaining offspring, but of obtaining a *large* progeny; in a savage or barbarous state of society he who has most kinsfolk is most honoured and most feared.

Moreover, polygyny contributes to a man's material comfort or adds to his wealth through the labor of his wives. The usefulness of wives as laborers largely accounts for the increasing practice of polygyny at the higher grades of economic culture. But economic progress also leads to a more unequal distribution of wealth, and this, combined with the necessity of paying a bride price, the amount of which is more or less influenced by the economic conditions, makes it possible for certain men to acquire several wives while others can acquire none at all. A multitude of wives may increase not only a man's wealth, but also his social importance, reputation, and authority, apart from the influence of the number of his children; it makes him able to be liberal and keep open doors for guests and foreigners, and it establishes connections with other families. Polygyny, as associated with greatness, is thus regarded as honourable and praiseworthy, whereas monogamy, as associated with poverty, is thought mean. The former has tended to become a more or less definite class distinction, and among some peoples it is not even permitted to others but chiefs or nobles.

At the same time polygyny has its disadvantages. It may be a costly affair. We often hear that a man must live in monogamy owing to the price he has to pay for a bride, or on account of the difficulty of maintaining several wives. Such a difficulty easily arises where life is supported by hunting and

the amount of female labor is limited, or where the produce of agriculture is insufficient to feed a larger family. This explains why polygyny is rarer at the lowest stages of civilisation than at somewhat higher stages. The expenses of having several wives are frequently increased by the necessity of providing each of them with a separate dwelling, a custom calculated to prevent quarrels and fights. Female jealousy is an obstacle to polygyny, either because the husband for his own sake dreads its consequences, or because his wife simply prevents him from taking another wife, or because he has too much regard for her feelings, or loves her too dearly to do so.

It is true that in many cases no jealousy or rivalry is said to disturb the peace in polygynous families, or that the women put up with polygyny because they derive some advantage from it—whether it implies a division of labor, or increases the reputation of the family or the authority of the first wife, or gives greater liberty to the married women. But more frequently we are told that polygyny is a cause of quarrels and domestic misery. This is certainly confirmed by my experience in Morocco.

The retrograde tendency towards monogamy in the highest grades of culture may be traced to a variety of causes. The desire for offspring has become less intense. A large family, instead of being a help in the struggle for existence, is often considered an insufferable burden. A man's kinsfolk are no longer his only friends, and his wealth and influence do not depend upon the number of his wives and children. A wife ceases to be a mere laborer, and manual labor is to a very large extent replaced by the work of domestic animals and the use of implements and machines. The sentiment of love has become more refined and, in consequence, more enduring. To a cultivated mind youth and beauty are by no means the only attractions of a woman, and, besides, civilisation has

given female beauty a new lease of life. The feelings of the weaker sex are held in higher regard. And the better education bestowed on the women, and other factors in modern civilisation, enable them to live comfortably without the support of a husband.

Polyandry

Polyandry, or marriages of several men with one woman, is a much rarer form of marriage than polygyny. Sporadic cases of it have been found in various parts of the world, but it is only in few areas that polyandry is, or so far as we know has been, practised by a considerable number of the population.

The most notable of these areas are Tibet and certain districts of India. In Tibet polyandry has prevailed from time immemorial, and is still very common. The husbands are as a rule brothers. The choice of the wife is the right of the eldest brother, and the contract he makes is understood to involve a marital contract with all the other brothers as well, if they choose to avail themselves of it; but sometimes the husbands are other relatives than brothers, or in rare cases even unrelated persons. All the husbands live together with their common wife as members of the same household. Fraternal polyandry is more or less common in vast districts of the Himalayan region, from Assam to the dependencies of Kashmir, chiefly among people of Tibetan affinities.

Another great centre for polyandry is South India. Its prevalence among the Todas of the Nilgiri Hills has attracted special attention. When a boy is married to a girl she usually becomes the wife of his brothers at the same time, and any brother born later will similarly be regarded as sharing his elder brothers' rights. But there are a few cases in which the husbands, instead of being brothers, simply belong to the same clan and are of the same generation. Polyandry prevailed among the Sinhalese of Ceylon until it was prohib-

ited by the British Governor about the year 1860; one woman had in many cases three or four or even more husbands, who were most usually brothers, especially in the highest caste.

Among the Nayars or Nairs of Cochin, Malabar, and Travancore we meet with polyandrous unions of a different, non-fraternal type, the prevalence of which has been testified by a large number of travellers from the beginning of the fifteenth century onwards. According to Nayar usage, every girl, before she attained puberty, went through a marriage ceremony, the essential incident of which consisted in the tying of a tiny plate of gold round her neck by the nominal husband, who then, after receiving the customary fee, went his way; he had no conjugal rights over the girl. Subsequently she was allowed to cohabit with any Brahman or Nayar she chose, and usually she had several lovers, who cohabited with her by agreement among themselves. All the lovers contributed to maintain the woman; but she lived apart from them, the children belonged to her kin, and according to some accounts the duties of fatherhood were entirely ignored. These unions were of the loosest and most fugitive character, and can hardly be called marriages even from a non-legal point of view.

Very frequently polyandry, like polygyny, is modified in a monogamous direction: as one, usually the first married, wife in polygynous families is the chief wife, so one, usually the first, husband in polyandrous families is often or mostly the chief husband. Any other man with whom he shares his wife is in various cases spoken of as a secondary husband, or as a deputy or an assistant who acts as husband and master of the house during the absence of the true lord, but on the latter's return becomes his servant, or merely as a recognised paramour or "half-partner."

Even in the case of fraternal polyandry the younger brothers are not always husbands in the full sense of the term, though they have access to the

eldest brother's wife, and sometimes the children are regarded as his children. Among many polyandrous peoples the various husbands live or cohabit with their common wife in turn—it may be for a month at a time; and if they are brothers, the eldest one is sometimes expressly said to take the lead.

Polyandry may be due to various causes. One of them is a numerical disproportion between the sexes. Among some polyandrous peoples the men are known to outnumber the women, and among others they are at all events said to do so. There may also be economic motives for polyandry. It may serve to check the increase of population in regions where the number of mouths must remain adapted to the number of acres; when the husbands are brothers it keeps the family property together; and sometimes the difficulty of raising the sum to be paid for a wife may induce brothers or other men to club together and buy a common wife.

It is obvious that poverty and paucity of women easily may be a combined cause of polyandry: where women are scarce the difficulty in procuring a single wife must be particularly great for the poor. The polyandry of the Tibetans, the Himalayans, and some peoples in the south of India has, in addition, been said to be partly due to the dangers or difficulties that would surround a woman left alone in her home during the prolonged absence of her husband, while he attends the cattle or is engaged in traffic or the chase or military pursuits, or is going from place to place to earn his livelihood. The unusual character of the polyandrous habits of the Nayars was most probably due to their military organisation, which prevented them from living the ordinary life of a husband and father of a family; they were nobles engaged in no other occupation but that of arms. Their non-fraternal polyandry has, for no adequate reason, played an important part in the study of early marriage customs.

McLennan and his followers looked upon polyandry of "the ruder sort," in which the husbands are not kinsmen, as a modification of and an advance from promiscuity, and considered fraternal polyandry to have developed out of the ruder form; and in a more recent essay dealing with South Indian polyandry Herbert Müller has likewise expressed the belief that the polyandry of the Nayars can only be explained as a late survival of an ancient marriage system, which was perhaps the earliest in the whole history of marriage.

Theories of this sort explain nothing and are of no value at all.

To explain polyandry is to trace it to its causes, and when this is done it is found that certain circumstances lead to unions in which the husbands are brothers and other circumstances to unions in which they are not so; but I see no reason whatever to assume that the former kind of union has developed out of the latter. It would indeed be rather surprising if a people so cultivated as the Nayars had preserved the primitive form, while lower castes living in the same neighbourhood had grown out of it and changed their polyandry into fraternal.

Although the number of peoples who are known to practise polyandry or to have practised polyandry as a regular custom is not large, it has been suggested by several writers that in early times polyandry was the rule and monogamy and polygyny exceptions. In support of this view it has been assumed that the levirate, or practice of marrying a dead brother's widow, which is a very widespread custom, is derived from polyandry.

But the levirate is so easily explained by existing conditions that we have no right to look upon it as a survival at all. Wives may be inherited like other belongings; and even when a son inherits the other property of his father it is easy to understand why he does not inherit the widow, apart from any consideration of age. To marry her is, generally speaking, to marry her, and nowhere is a son allowed to marry his mother; hence it is natural, at least where the marriage has been monogamous, that the right of inheritance in this case belongs to the brother, and even marriage with a step-mother may be looked upon as incestuous. The levirate, however, is not only regarded

as a right belonging to the deceased husband's brother, but in many cases as a duty incumbent upon him. The widow and her children are in need of a protector and supporter; and if the man died childless, it may be the duty of his brother to marry his widow in order to "raise up seed" to him, as among the ancient Hebrews.

Group-marriage

Group-marriage has been found among the polyandrists of Tibet, India, and Ceylon. In Tibet and the Himalayan region there are households containing several husbands and several wives. Among the Sinhalese of Ceylon it was not only frequently the custom for one man to have at the same time a number of wives and for one woman to have at the same time a number of husbands, but it was also a frequent custom for two or three men to have two or three wives in common. Among the Todas "two brothers, who in former times would have had one wife between them, may now take two wives, but as a general rule the two men have the two wives in common"; and of various other polyandrous peoples in India we are likewise told that if one of the brothers who have a wife in common brings a new wife, he has to share her with the other brothers.

There can be no doubt that in all these cases group-marriage has arisen as a combination of polygyny with polyandry. It is possible that Caesar's well-known statement about the marriages of the ancient Britons likewise refers to a similar combination. He says: "In their domestic life they practise a form of community of wives, ten or twelve combining in a group, especially brothers with brothers and fathers with sons. The children born of such wedlock are then reckoned to belong to that member of the partnership who was the first to receive the mother as a bride into the household." The latter passage almost suggests that the community of wives spoken of—provided that it really existed—had a polyandric origin.

Genuine group-marriage has, so far as I know, been only met with side by side with polyandry. But there are peoples who have a kind of sex communism, in which several men, on certain conditions, have the right of access to several women, although none of the women is properly married to more than one of the men. A detailed examination of the circumstances connected with this sex communism, which to some extent resemble those which in other instances have led to polyandry, has convinced me that we have no right to regard it as evidence of a prior state of genuine group-marriage; and the same is the case with various other customs that have been imagined to be survivals of such a state. Nor can I in the least agree with those writers who maintain that group-marriage was the earliest form of marriage out of which the others have gradually developed.

The Duration of Marriage and the Right to Dissolve It

It is the general rule that marriage is contracted for an indefinite length of time or for life, although even in the latter case it may very frequently be dissolved, for some reason or other, during the lifetime of the partners.

Among a few uncivilised peoples, particularly some of the lower hunters and incipient agriculturists, divorce is said to be unknown or almost so; among many others it is said to be rare, or marriage as a rule to last for life; but there are also many tribes in which divorce is reported to be of frequent occurrence or marriage of very short duration. Among a large number of simple peoples the husband is able to dissolve the marriage at will or on the slightest grounds or pretexts, and in the majority of these cases a similar right is said to be granted to the wife. But we are also frequently told that a man must not divorce his wife and a wife not separate from her husband without just or good cause.

The ideas as to what constitutes a good cause vary in different tribes. The

most generally recognised ground for divorce is probably adultery on the part of the wife, and another very frequent cause is her barrenness. Among some savages the wife may dissolve the marriage if the husband neglects or ill-treats her, if he will not do his fair share of work, or if he deserts her or is long absent from home. Among certain natives of Eastern Central Africa she may divorce a husband who refuses to sew her clothes.

The rules relating to divorce, as well as other facts show that among the lower races in general a married woman is by no means destitute of rights, and that her position often is distinctly better than among many peoples who have reached a higher degree of culture. According to the old Chinese law a husband can divorce his wife for various reasons, including barrenness, disregard of the husband's parents, talkativeness, and envious or suspicious temper; whereas it does not seem that a wife is in any case allowed to desert her husband or to demand a separation from him. The same was the case in Japan till the year 1873, when a law was enacted which for the first time permitted the wife to bring an action of divorce against the husband.

Among peoples of Semitic culture he had, or still has, the legal right of repudiating his wife at will. Among the Jews this unlimited right gradually ceased to exist in practice, and was at last, in the earlier part of the eleventh century, formerly abolished, although he retained the right to divorce her where a good cause could be shown. On the other hand, the Jewish law has never given the wife a right to divorce her husband; but it has allowed her to sue for divorce and authorised the court to force him to give her a bill of divorce, which he is then supposed to give of his own free will and accord.

According to Mohammedan law the husband may repudiate his wife whenever he pleases, but the wife can in no circumstances divorce her husband, although she may take steps leading to the

dissolution of her marriage. In many parts of the Mohammedan world the husbands exercise the right to divorce their wives to an extent which seems to be almost without a parallel.

On the other hand, with orthodox Hindus marriage is a religious sacrament which cannot be revoked. A woman convicted of adultery may be deprived of her status and turned out of her caste, but even in this case divorce in the ordinary sense is an impossibility. She cannot form a new connection, and, often at least, remains in her husband's house on the footing of a slave. At present the orthodox Hindu law of divorce is more or less disregarded by certain low castes in the north of India and by many castes, both high and low, in the south, among whom usage has superseded texts. Among the Greeks and Romans in early days, as among the Hindus, marriage evidently was a union of great stability, although in later times, contrary to what was the case among the Aryans of India, it became extremely easy and frequent. According to the old customary laws of the Teutonic peoples, a marriage could be dissolved by agreement between the husband and the woman's kin, and the husband was entitled to repudiate his wife if she was sterile or guilty of conjugal infidelity, and perhaps for some other offences. The wife had originally no right to dissolve the marriage.

Christianity revolutionised European legislation with regard to divorce. According to St. Matthew, Christ taught that a man might put away his wife for fornication, but for no other reason; and St. Paul lays down the rule that if a Christian is married to an unbeliever and the latter departs, the Christian "is not under bondage." Yet, in accordance with the ascetic tendencies of early Christianity, the Church gradually made up her mind to deny the dissolubility of a valid Christian marriage, at least if it had been consummated; such a marriage was a sacrament and must consequently remain valid for ever.

At the same time the Church recognised a legal process which was popularly, though incorrectly, called a divorce "from the bond of matrimony," in case the union had been unlawful from the beginning on the ground of some canonical impediment, such as relationship or earlier engagement of marriage. This only implied that a marriage which never had been valid would remain invalid, but practically it led to the possibility of dissolving marriages that in theory were indissoluble. For, as Lord Bryce observes, "the rules regarding impediments were so numerous and so intricate that it was easy, given a sufficient motive, whether political or pecuniary, to discover some ground for declaring almost any marriage invalid."

The canonical doctrines that marriage is a sacrament and that it is indissoluble save by death were rejected by the Reformers. They all agreed that divorce, with liberty for the innocent party to remarry, should be granted for adultery, and most of them regarded malicious desertion as a second legitimate cause for the dissolution of marriage. The latter opinion was based on St. Paul's dictum quoted above, which, curiously enough, was broadened by Luther so as to include the malicious desertion even of a person who was not an unbeliever. He also admitted that the worldly authorities might allow divorce on other strong grounds, and several reformers went farther than he. These views exercised a lasting influence upon the Protestant legislators in Germany and other continental countries.

The Fathers of English Protestantism as a body were more conservative than their brethren across the Channel. They were unanimous, however, in allowing the husband to put away an unfaithful wife and contract another marriage, and prevailing opinion appears also to have accorded a similar privilege to the wife on like provocation. A general revision of the ecclesiastical code, with special attention directed to the law of divorce, was contemplated in the

earlier days of the Reformation; and a commission of leading ecclesiastics was appointed for this purpose by Henry VIII. and Edward VI. The commissioners recommended that "divorces from bed and board," which had been rejected by nearly all the English reformers as a papist innovation, should be abolished and in their place complete divorce, with liberty for the innocent party to marry again, should be allowed in cases of adultery, desertion, and cruelty. The whole scheme, however, fell to the ground.

In the Foljambe case, in 1602, it was decided that remarriage after judicial separation was null and void. In the latter part of the seventeenth century, however, a practice arose in England which in a small degree mitigated the rigor of the law. While a valid English marriage could not be dissolved by mere judicial authority, it might be so by a special Act of Parliament. Such a parliamentary divorce was granted only for adultery in certain circumstances, and could be obtained only through the expenditure of a fortune, sometimes amounting to thousands of pounds.

In the civil divorce law of 1857 the legal principle of the indissolubility of marriage was at last abandoned: divorce could be granted to a husband whose wife had been guilty of adultery and to a wife whose husband had been guilty of the same offence under certain aggravating circumstances. In Scotland, on the other hand, the courts began to grant divorces very soon after the Roman connection had been repudiated, and in 1573 a statute added desertion to adultery of the husband or the wife as a ground of divorce.

On the Continent a fresh impetus to a more liberal legislation on divorce was given in the eighteenth century by the new philosophy, with its conceptions of human freedom and natural rights. In France the new ideas led to the law on divorce of September 20, 1792. In the preamble of this law it is said that facility in obtaining divorce is the natural consequence of the individual's right of freedom, which is lost if engagements are made indissoluble. Divorce is granted on the mutual desire of the two

parties, and even at the wish of one party on the ground of incompatibility of temper, and on many other grounds.

But twelve years later the law of 1792 was superseded by the new provisions in Napoleon's Civil Code, which made divorce more difficult; and at the Restoration in 1816 it was abolished in France, not to be re-enacted until 1884. In the course of the nineteenth century or later divorce was made legal in several Roman Catholic countries, even in the case of marriage between Catholics. In the United States, South Carolina stands alone in granting no divorce whatsoever, being the only Protestant community in the world that nowadays holds marriage indissoluble.

According to the laws of those European and American states in which divorce is permitted, the most general grounds for divorce are offences of some kind or other committed by either husband or wife and entitling the other party to demand a dissolution of the marriage. In this respect the two spouses are as a rule on a footing of perfect equality; but they are not always so. While any act of adultery in the wife is everywhere a sufficient cause for dissolving the marriage, there are still countries in which adultery on the part of the husband only in certain circumstances gives the wife a right to demand a divorce; this was the case in England till 1923. Desertion, or "malicious" desertion, or desertion "without just cause or excuse," is frequently mentioned as a ground of divorce, especially in Protestant law-books.

In most countries where divorce is allowed ill-treatment of some kind is a sufficient reason for it. An extremely frequent ground of divorce is the condemnation of one of the parties to a certain punishment or his or her being convicted of a certain crime. And there are yet some special offences that are recognised as causes for divorce, such as the husband's neglect of the duty to support his wife although he is able to do so (in many jurisdictions of the United States), drunkenness, inveterate

gambling habits, and ill-treatment of the children.

Moreover, the grounds of divorce include certain circumstances which may or may not involve guilt in one of the parties, but in all cases are supposed to make marriage a burden for the other spouse, such as some loathsome disease, insanity or incurable insanity, and impotence in the husband or wife. The Swiss code contains a provision to the effect that even though none of the specified causes for divorce exists, a marriage may be dissolved if there are circumstances seriously affecting the maintenance of the conjugal tie.

Divorce by mutual consent is at present allowed on certain conditions in several countries. Such a condition is separation *de facto*, by mutual consent or otherwise, for a certain period. In Sweden a judicial separation may, upon the application of either husband or wife, be converted into a divorce after one year. According to the Russian Soviet law "the grounds for divorce may be either the mutual consent of the parties or the desire of one of them."

Influenced by the rigid attitude of the Church, most Christian legislators are still imbued with the idea that a marriage must inevitably end in a catastrophe, either by the death or some great misfortune of one of the consorts or by the commission of a criminal or immoral act. It would seem that a contract entered into by mutual consent also should be dissolvable by mutual consent. But it is argued that marriage cannot be treated as an ordinary contract, and that its dissolution should only be permitted on very serious grounds.

It is said that few things can be more harmful to the moral well-being of the offspring than the divorce of their parents. But the interests of children are obviously out of the question where the marriage is childless, and where it is not so, there is every reason to believe that it is rather better than worse for the child to live peacefully with one

parent alone than to live with two parents who cannot agree.

If regard for the children's welfare were the real cause of the prohibition of consensual divorce, why should it be prohibited in so many countries which allow consensual separation? Moreover, where such divorce is not allowed by law it is nevertheless easily obtained in practice; the effect of legal restrictions on the practice of divorce has been absurdly exaggerated. And it is strange that any legislator should persist in regarding crime or immoral conduct on the part of one of the spouses as a more proper ground or excuse for dissolving the marriage than the mutual agreement of both.

A large number of law-books that permit divorce also permit judicial separation either for life or for a definite or indefinite period, which implies that neither party can contract another marriage before the death of the other or before the marriage is dissolved by divorce. In some of these law-books the grounds for separation are more or less different from those for divorce; whereas according to others, separation is not, as in England, intended as a minor remedy for minor offences, but as an alternative enabling petitioners to obtain universal relief without a complete severance of the marriage tie. In those Roman Catholic countries which still prohibit divorce the grounds for judicial separation are generally very similar to, though not infrequently somewhat more extensive than, the grounds for which divorce may be obtained in other countries.

When we pass from laws to practice we notice that the divorce-rate varies greatly in the countries of Western civilisation. It is highest in the United States, with the possible (or probable) exception of European Russia; in the former country the ratio of divorces to marriages is one to six, while in the latter it was, in 1926, 1.6 to ten, unregistered marriages and divorces not included. Among the other European countries it is highest in Switzerland,

while it is particularly low in Great Britain.

One reason for the remarkably high divorce rate in the United States is the laxity of procedure which has grown up there, and another reason is that the economic arrangement which forms the basis of marriage in other countries tends to make for greater permanence than in the United States. The low divorce rate in Great Britain, again is intimately connected with the heavy cost of carrying a suit through. Only after the initiation of a Poor Persons' Procedure in 1914 the working class began to enter the field of divorce, which has increased considerably the divorce rate.

Both in the various countries of Europe and in the United States divorce has been steadily increasing in the latter part of the last century and during the present one. This rapid rise of the divorce-rate is not surprising in an age of correspondingly rapid social changes, an age when individual differences have become more accentuated, the causes of disagreement multiplied, the frictions stronger and, consequently, more likely to end in a rupture of the marriage tie. The increasing economic independence of women has also its share in the increasing instability of marriage; it is natural to find divorce more frequent where a woman finds it more easy to earn her bread. In the United States about two-thirds of the divorces are granted on demand of the wife.

It is a widespread idea that divorce is the enemy of marriage and, if made easy, might prove destructive to the very institution of the family. This view I cannot share. I look upon divorce as the necessary remedy for a misfortune and as a means of preserving the dignity of marriage by putting an end to unions which are a disgrace to its name. If, as I have tried to show, marriage is not an artificial creation but an institution based on deep-rooted sentiments, conjugal and parental, it will last as long as these sentiments last. And should they ever cease to exist, no

laws in the world could save marriage from destruction.

For a more detailed study of the subject the reader is referred to the author's work *The History of Human Marriage*, fifth edition rewritten, 3 vols., 1921, which contains a bibliography. Different views on many topics are found in R. Briffault's work *The Mothers*, 3 vols., 1927 (criticised in the author's book *Three Essays on Sex and Marriage*, 1934). Other books on marriage, or certain aspects of it, from an historical or sociological point of view: Lord Avebury, *The Origin of Civilization*, 1912; J. J. Bachofen, *Das Mutterrecht*, 1861; I. Bloch, *Das Sexualleben unserer Zeit*, 1919 (English trans. of an earlier edition under the heading *The Sexual Life of Our Time*, 1908); A. E. Crawley, *The Mystic Rose*, 1902 (new edition revised and enlarged by Th. Besterman, 2 vols.); Havelock Ellis, *Studies in the Psychology of Sex*, vols. vi. and vii., 1923 and 1928; Sir J. G. Frazer, *Totemism and Exogamy*, 4 vols., 1909, and *Folk-Lore in the Old Testament*, 3 vols., 1919; A. van Gennep, *Les rites de passage*, 1911; A. Giraud-Teulon, *Les origines du mariage et de la famille*, 1884; E. Grosse, *Die Formen der Familie und die Formen der Wirtschaft*, 1896; E. S. Hartland, *Primitive Paternity*, 2 vols., 1909; F. von Hellwald, *Die menschliche Familie*, 1889; L. T. Hobhouse, G. C. Wheeler, and M. Ginsberg, *The Material Culture and Social Institutions of the Simpler Peoples*, 1915; G. E. Howard, *A History of Matrimonial Institutions*, 3 vols., 1904; Ch. Letourneau, *L'évolution du mariage et de la famille*, 1888; J. P. Lichtenberger, *Divorce. A Social Interpretation*, 1931; J. Lippert, *Die Geschichte der Familie*, 1884; J. F. McLennan, *Studies in Ancient History*, 1886; B. Malinowski, *The Family among the Australian Aborigines*, 1913, and *The Sexual Life of Savages in North-Western Melanesia*, 1929; L. H. Morgan, *Ancient Society*, 1877; F. Müller-Lyer, *Die Familie*, 1912, and *Phasen der Liebe*, 1913 (trans. under the heading *The Evolution of Modern Marriage*); R. de Pomerai, *Marriage Past Present and Future*, 1830; A. H. Post, *Studien zur Entwicklungsgeschichte des Familienrechts*, 1890; W. H. R. Rivers, *The History of Melanesian Society*, 2 vols., 1914; H. Spencer, *The Principles of Sociology*, vol. II, 1881; C. G. Seligman, *The Primitive Family in its Origin and Development*, 1889.

E. W.

MASTURBATION. The Saint and the Sinner are twin brothers, born and nourished from the same source of desire and denial. Puritanism breeds frivolity. Combine the two and you have the story of sex mores in a nutshell. Masturbation, a child born in sin and iniquity, suffered most from Stepmother Taboo. And, consequently, there is nowhere so much looseness of gossip tongues, confu-

sion of purpose, and frivolity of method as in this particular branch of sexology. One has but to consult some of the standard books on sex, not to mention the so-called popular literature, to realize the confusion of views and how often the individual complexes of each particular writer take umbrage under scientific verbiage. This applies not only to the moral side of the issue but to the very definition of what constitutes an act of masturbation.

What Is Masturbation?—In its original form, masturbation (*manu stuprum*) implies genital friction by the use of the hand for the purpose of erotic self-gratification. It is not necessary for us here to emphasize that the use of the hand to induce stimulation of the genitals is not a *conditio sine qua non*; and that, generally speaking, there are a great many objects and organs other than the hands that may be greatly preferred as *corpora fricantia*. The files of urologists contain curious finds in the bladder of catheters, hairpins, candles, bananas, carrots and similar objects, launched originally for a pleasure trip into the urethra or vagina but landed a bit too far from the intended destination. In women, a mere crossing and recrossing of the legs can substitute for manual friction.

A far greater difficulty arises when we contemplate not the means employed to secure self-gratification, but the actual mechanics of masturbation. The current view that masturbation is a sort of solitary sex play otherwise abiding by the rules observed in the heterosexual act is grossly misleading. Moll divided the sex drama into two component acts: the so-called impulse of detumescence and the impulse of contrectation. Contrectation being somewhat vague and implying many factors outside of the sex act proper the terms

and *detumescence* have been chosen as more fully expressing the physiology of each particular impulse. Tumescence represents the stage of forepleasure leading up to the engorgement of the erectile bodies and intensification of the pent-up urge; detumescence represents the climax of the drama, culminating in orgasm and ejaculation.

Rudiments of these two phases of the

sex drama can be traced also in masturbation. For, in masturbation, too, there is to a certain extent, at least, the "piling up of the fuel" and the "leaping out of the devouring flame" (Ellis). However, not only are those two impulses more confluent and overlapping, but ejaculation and orgasm—the keynotes of the sexual act—are neither the criterion of the performance nor do they belong to the essential mechanics of masturbation.

We know that babies, barely freed from the swaddles, perform the act of masturbation. There is no doubt as to the activity itself nor as to the pleasure derived from the act. Freud has built upon this observation an ingenious theory of sex focalization from a pregenital to the genital phase. Yet no one is ultra-Freudian enough to impute to the babe fixed sex emotions or adult sex experience.¹ In a somewhat similar vein one must interpret masturbation observed in young girls or even mature maidens who have never had real sexual contact and whose self-gratification is orgasm-less and "act-less," in a sense.

Moreover, while ordinarily the mechanism of masturbation is accompanied by some sort of friction applied to the erogenous zones, friction too is not an essential attribute of masturbation. Purely mental images (erotic phantasies) can take the place not only of the manus but of the entire manual of masturbation. As a matter of fact, erotic imagery is a more important factor than friction. In short, there is such a thing as mental (visual, auditory, olfactory and even intellectual) frictionless masturbation.

Summarizing, we may then define masturbation as an act of auto-erotic stimulation by means of friction of the erogenous zones of the body and *ad hoc*

¹ Freud divides the masturbatory act in two parts: one is the adoption of a peculiar erotic phantasy, and the other is purely manipulative for the sake of self-gratification. In children, the purely pleasure-seeking manipulative act is the prime motive. In adults, both the manipulative act and the erotic phantasy accompanying the manipulations are joined together with the emphasis on the erotic motive.

conjured erotic reveries (sex phantasies)—both stimuli integrated in the same act, or one of them predominating and in some cases as the sole medium or modus of masturbation—with or without resulting orgasm and ejaculation. This frame, and it is merely a frame, is wide enough to take in a variety of auto-erotic expressions and there are a great many of such variations—so many, that even certain phases and forms of coitus would fit into its orbit.

Incidence and Coincidence.—Authorities differ as to the number of men and women who have resorted to the act of masturbation during their lifetimes. The discrepancy ranging from 50% to 99% reported by various authors is due not only to the difficulty of obtaining credible material in this most reticent of all individual privacies, but also to the individual interpretation of the interviewer's and correspondents' understanding of what constitutes an act of masturbation.

Meagher² sees in masturbation "the chief sex manifestation of youth." The ages between one and five represent the auto-erotic stage in the strict sense, with the nourishing and excretory zones (including the skin) as the chief portals of pleasure sensations; the oral, anal, and genital zones serve as the main centers of masturbation. Then there ensues between six and twelve the so-called latent stage with narcissistic convergence of love, followed by homosexual leanings between twelve and sixteen. At puberty, the sex urge becomes fully gonadocentric, with masturbation at the threshold and fringe of object love. This schematic diagram of the line of least resistance in the onrush and overflow of the sex urge illustrates that, collectively speaking, masturbation is a universal form of sex expression in one or the other periods of life and, independently of what statistics reveal or hide, forms an integral part of the sex life of man. "It is the germ of amore" (Venturi). This statement will probably be challenged by not a few sexologists, but especially con-

² John F. W. Meagher, *A Study of Masturbation and the Psychosexual Life*.

tested with regard to women. That young girls resort to masturbation is especially abhorrent to the chivalric mind of the male, and the easiest way out is to deny the existence of what is emotionally offensive. Yet reality knows no such scruples.

Margaret Mead reports from Samoa that nearly every girl masturbates from the age of six or seven. Similar facts have been confirmed by other observers of savage life. It would be strange, indeed, if civilized man were to be more "natural" than the man of nature. Among the 26 children up to one year of age investigated by Neter, there were 18 girl babies performing masturbatory manipulations.³ No one familiar with the subject will deny that "girls resort to masturbation from their earliest childhood and continue beyond the age of latency when most boys, temporarily at least, lose interest in masturbation."

In boys, adolescence brings a new influx of sex sensations which seek relief in increased masturbation, and though there is no lack of girls who resort to this *modus amandi*, they probably remain behind their coetaneous boy friends in frequency. As if in compensation for a missed opportunity, there is a tendency among girls to continue the practice beyond the pale of what is considered the proper masturbatory age. This agrees with the observations of another authority who is of the opinion that in young girls ten to sixteen years of age masturbation is on the whole less common than in boys of the same age but that, on the other hand, from the ages of eighteen to nineteen and twenty, continued sexual self-gratification is almost universally practiced by women, even if it is not always practiced to excess. Katharine Bement Davis⁴ calculated that 60% of the questioned one thousand college women above the age of twenty-two admitted masturbation. Her averages are: 49% up to and including eleven years of age; 14% between

twelve and fourteen; and 30% at eighteen and over.

Pollutions and Equivalents.—Pollution differs from intentional "conscious" masturbation not only in the degree of awareness, but in many other respects. The phantasy pattern of masturbation has been called attention to. In the conscious act of masturbation, a mental picture is conjured of what the actor knows of the realities of sex, or at least of the most appealing scene or scenes. It is the individual choice of the pattern or plot which supplies to an otherwise prosaic, monotonous act the colorful setting of an intimate experience.

Like coitus, masturbation is not only a mechanical device for relieving tension, but the culmination of a love drama. In pollution, the elements of reality are woven into a magic carpet of wish-fulfillment by the nimble craftsmanship of dream work. Of the two—masturbation *versus* pollution—the latter is freer to express hidden and forbidden desires, and is therefore much more symptomatic of the subconscious desires. If we accept Freud's conception of the dream as the disguise of a repressed desire and symbolized wish-fulfillment, then an ever so much distorted erotic dream can be interpreted as masked pollution. Näcke speaks of "pollution dreams without eroticism," and there are undoubtedly many erotic dreams without pollution. In this respect, there is hardly a hard and fast rule, and one cannot easily decide where one sphere ends and the other begins.

Pollution is commonly interpreted as a wet dream. However, not every pollution is wet. There are dry pollutions as there are wet, rudimentary or dreamless pollutions. Like in masturbation, ejaculation, while often concluding the cycle, does not in itself constitute an absolute requisite. The essential difference between an "ordinary" dream, based on repression and wish-fulfillment, and pollution lies in the more vivid and colorful love phantasy and its direct bearing on sex gratification. That there are nondescript intermediate stages dif-

³ Ploss and Bartels, *Das Weib*. Vol. I.

⁴ Katharine Bement Davis, *Factors in the Sex Life of Twenty-Two Hundred Women*.

ficult to classify is easy to comprehend on the basis of sex symbolism of dreams in general.

In very young children in whom, due to lack of repression, dream and reality are less sharply divided and, if at all, feebly contrasted, pollutions have no real basis in their lives. With the development of the ego consciousness and the gaining of a sense of responsibility and guilt, sex dreams become more frequent. In somewhat older children, one has little difficulty in discerning rudiments of pollutional phenomena. A student of child psychology will hardly deny that children can experience pleasurable or orgasmic dreams, often accompanied by unconscious masturbatory manipulations in sleep. Ellis's contention that pollutions usually appear about puberty may be correct as far as the impulse of detumescence is concerned. It certainly does not apply to the rudiments of erotic dreams observed at a much earlier age. At about the age of puberty or immediately preceding maturity, pollutions are frequent and may be the first installment of the maturing sex indebtedness.

The older school of sexologists trained in mechanical physiology was inclined to look upon congestion of the prostatic urethra, plethora and distension of the vesicles with sperm fluid as the principal causes of pollution. While discounting the vesicle distension theory, which has no basis in physiology, it is nevertheless true that sex stimulation—physical, erotic or mental—as well as congestion and inflammatory changes in the deep urethra and its appendages are contributory factors inducing masturbation and frequent pollutions. To say more, or to imply as Max Huhner does, that "masturbation" (or pollution, for that matter) is dependent "upon a pathological condition of the prostatic urethra,"⁵ is to overstate the case to the point of exaggeration. There is no such thing as a single physical cause responsible for either masturbation or

pollution. There are men and women leading a normal sexual life who, after intercourse, moderate or excessive, have one or more pollutions during the night. There are others who have never had actual intercourse and yet experience regular night visitations.

Ellis thinks that while in chaste boys erotic dreams are a definite and regular phenomenon, it seems to be an exception for girls to experience definite erotic dreams about the period of puberty and adolescence. Rohleder maintains that a chaste virgin experiences nothing of the kind, and Fränkel admits the possibility of sex dreams but not of "lust dreams." As a matter of fact, all these fine distinctions are pointless. Young girls and older women have pollutions with and without orgasm. The latter is not even a peculiar female deficiency. There are in men, as well as in women, cases of interrupted pollutions, as there are cases of incomplete masturbation. Marcus substitutes an ingenious explanation for some of those peculiar interruptions. Where there are strong idiosyncrasies or strong conscientious objections, the dream censor is more watchful, and the watchdog of the ego barks loudly at the approach of the suspicious stranger—too late perhaps to stop his approach, but not late enough to keep him from reaching his objective. This is one instance of *pollutio interrupta*. Under still more stringent supervision, the mental alarm clock starts ringing and the person wakes up altogether.

Where those authorities, who refuse to admit virginal pollutions, are probably nearer the truth has more to do with the mechanics in each individual case than with the actual motives of pollution. A woman who has never had intercourse cannot dream of it as an actual experience equipped with all the paraphernalia of coitus. The contents of the dream derive their strength and flavor from unconscious (repressed) or latent wish remnants. The trappings and the mechanics are taken from actual sex experiences. It may be mere petting, kissing, the approach or touch of the

⁵ Max Huhner, *Masturbation* (American Magazine, February, 1931).

desired person, a stranger, or an animal—all of them being symbolic of a latent wish, clothed in the vestments or vestiges of day memory. The dream is wet or dry, orgasmic or "without eroticism," depending on the deep conflicts taking place in the subconscious personality, and on the previous sex experiences of the individual.

There are many forms of pollutions, and quite a number of *formes frustes* and equivalents. Such equivalents of pollution are, for instance, erotic "day dreaming" (*Continued Story* by Mabel Learoyd), and what in the Middle Ages was known as *delectatio morosa*, spermatorrhea, some instances of urethral gleet and leucorrhea, pruritus ani and vulvae, nose and ear picking, certain cases of enuresis, and a host of various hysterical manifestations. In hysteria, "the process of discontinuing masturbation is literally reproduced again backwards" (Freud), forming a true conversion neurosis.

The Masturbation Complex.—Many authors have dwelt upon the physical stigmata of masturbation. Kisch, Dickinson and others described changes on the external female genitals by which a "typical" woman masturbator could be diagnosed without regard to personal history. In addition, certain changes in facial expression, physique and habits have been laid to the practice of masturbation. We do not take great stock in these "objective" findings. We see no reason to assume that excessive intercourse should be less disturbing to the tissues than excessive masturbation. The avenging ghost of the terrifying ill effects of masturbation is too ludicrous a phantom to disturb us any longer with its unfounded nightmares of bodily or mental incapacities following masturbation. Excessive masturbation carries with it the penalty of all excessiveness.⁶

⁶ While masturbation was looked upon as a disease-producing factor since the time of Hippocrates, the peak of exaggeration among the profession and laity was reached between the 17th and up to the end of the 19th century. Tissot's book, *De l'Onanisme*, published in the last quarter of the 18th century, had a disas-

The real threat to the well-being of child or adult is the terror of punishment and the paralyzing mental anguish arising from the vain struggle against masturbation. For, with most adults not prompted by external circumstances, habitual masturbation is a symptom of a deep hiatus between the will towards forbidden satisfaction and the social will to curb the asocial desire. Where the two clash in uncompromising warfare, masturbation as the lesser evil takes on the rôle of the *tertium gaudet*.

Stekel, more than anyone I know, has emphasized the close alliance of masturbation and homosexuality. The flight to masturbation is a means of escape from the plight of the homosexual. The compromise is less compromising and saves the victim from the clutches of vice chasers and scandalmongers. To the full-fledged homosexual urge, this may be a poor substitute, at best, but for the latent homosexual—and the number is legion—masturbation performs an act of mercy of incomparable value.

On similar grounds, incest, socially the most hateful form of sex reversion—the milk and marrow of all taboo—often creeps under cover of masturbation. For a woman who has an invincible father complex and therefore appears frigid when in reality she is sex hungry, masturbation and pollutions, with or without masked father phantasies, offer a most convenient form of at least partial satisfaction of her desires. If one cares to look at masturbation with the proper mental perspective, one is apt to understand why a man or a woman, after "normal" and satisfactory intercourse with perhaps several orgasms, concludes his or her love night with one or more acts of masturbation or pollution. Apparently, "normal" intercourse that is fully satisfactory to one man does not appear to exhaust the

trous effect on the minds of the weak and the wicked. That Tissot's spirit still lives with us, despite the more liberal view taken by the majority of contemporary writers, is one of those curiosities (or monstrosities) which characterizes many other aspects of modern civilization.

hidden cravings of another. Here, too, masturbation is an attempt at liquidation of the most variegated and most complex of all instincts and personality complexes. The same applies to masochism and other perversions with which masturbation is brought into close relationship.

As Freud has so well expressed a similar thought negatively: "On the other hand, the problem of onanism becomes insoluble if we attempt to treat it as a clinical unit, and forget that it can represent the discharge of every variety of sexual component and of every sort of phantasy to which such components can give rise."⁷

Some authors condemn masturbation because it breeds an inferiority complex. If the inferiority complex is the subjective expression of social disapproval in general, then, of course, masturbation perceived under the cloud of sin and overawed by the thunder of social condemnation is bound to intensify the feeling of subvaluation of personality. However, convinced as we are that the feeling of inferiority is not solely the result of psychic trauma or organ inferiority (Adler) but flows from the same murky source of the subconscious, which is the whirlpool of all repressed desires and unresolved mental conflicts, we shall here, too, see in masturbation a pathognomic rather than a pathogenic factor. The weak, sick organ or the psychic trauma referred to are merely convenient objects of displacement and transference of a neurotic disposition. Masturbation must be viewed in the nature of compromise and palliation. That the same medium whose purpose is alleviation of symptoms can and, under certain circumstances, does rebound as a boomerang, is something that no therapist conversant with the idiosyncrasies of human nature can overlook.

As a rule, it is not correct to burden masturbation with the sundry charge that it makes a man self-centered, egotistic and anti-social. An extreme introvert, who lacks self-confidence and is too shy and self-conscious to assert him-

self socially, will be more likely to play solitaire also sexually. His libido is self-centered, *ergo* non-transferable. Here, too, masturbation is not the culprit but rather a means of deflation and neutralization of accumulated tension which threatens to overflow into morbid anti-social channels. Under those circumstances, to speak of masturbation as a disease is not only erroneous but reveals sheer ignorance of fundamentals. If anything, masturbation serves as a sedative for a variety of neurotic dispositions, and as a moderator and deflector of criminal tendencies renders inestimable service to society.

Perhaps we should add that we do not advocate masturbation on prescription. We have as little faith in the advocacy of masturbation as we have in its cure by means of "silver nitrate instillations in the posterior urethra." No one can break a strong tendency towards masturbation, even if he succeeds in breaking the habit, without creating a vicious cycle of dangerous cross-currents. There is no such thing as a "masturbation neurosis," but there is the necessity of masturbation for certain neurotics (symptomatic and palliative) which persists long after puberty and which cannot be substituted by high moral precepts or physical therapy.

Conclusion.—(1) Masturbation is one of the most universal ways of sex expression. (2) Ontologically, masturbation performs an important function in the cycle of individual development. It is a physiological by-product of sex development in youth and serves as compensation of repressed desires in the adult. (3) Habitual masturbation is not a malady but a symptom and, therefore, one should not attempt to cure masturbation without an attempt to resolve the underlying conflict of the neurosis, which makes masturbation habit-forming. (4) As an outlet for atavistic and perverse cravings, masturbation performs a socially useful function. J. T.

MATTHIAS THE PROPHET. In New York City, about 1825, women of the several Protestant churches organ-

⁷ Sigmund Freud, *A Case of Obsessional Neurosis* (Collected Papers, Vol. III).

ized a "Holy Club." It was so called because its members had been "moved by the Holy Ghost" and had been made perfect. A preacher among them, named Pearson, assumed the title of "Elijah the Prophet." Soon after the death of his wife he announced her forthcoming resurrection, that she might give birth to a child promised her by God. Another childless woman became the habitat of this deceased wife's spirit, and the "prophet Elijah" in a vision saw her "big with child." Also, this woman had a vision that she was the "spiritual wife" of "Elijah the Prophet," and it was so recorded in heaven. In answer to prayer "Elijah" made her a visit while her husband was away. This annulled her earthly marriage. Elijah Pearson had a revelation authorizing a sexual relation with this woman. In spite of professions of celibacy, many sexual scandals became public property. These centered around the "Magdalena Asylum."

Now one Robert Mathews (1788-1837) entered the charmed circle. At sixteen he apprenticed himself to a carpenter, because that was the only trade ever adopted by a divine being. He became known as "Jumping Jesus," because of his superhuman piety and raving anger. Then he became "Matthias the Prophet," having been first converted by Dr. Finney, a famous revivalist of his time. Matthias soon claimed the spirit of the Father, and impersonated God. He declared that God had never authorized the wicked to multiply the species. By his superior godliness he, and others like him, were exempt from the injunctions against marriage and sex. Only they were righteous enough to procreate.

The Kingdom of Heaven was to be established at Sing Sing, N. Y. Matthias announced himself as the Adam of a new gospel dispensation, and God showed him his Eve. She was commonly known as Mrs. Folger, whose husband spent most of his time at business in New York City. It was revealed by God that Mrs. Folger and Matthias

were "matched spirits." As this spiritual union was growing in intensity, Mr. Pearson and Mrs. Folger made their property over to Matthias, a godly communism was the divine order, and Matthias was the divine custodian of the earthly goods.

As the spiritual ardor grew, Mrs. Folger bathed Matthias behind locked doors, and the envious inmates of the "Kingdom" remarked that it took a long time. It was admitted to have taken place in complete nudity. Mrs. Folger, although married and a mother had claimed to be a virgin, because she was either more than a woman or her husband less than a man. Dutifully Mr. Folger turned his wife over to Matthias. Considerately Matthias announced that his own daughter, already married and still unknown to Folger, was the latter's spiritual mate.

Baptism by immersion and in complete nudity became mandatory. At their love feasts everybody kissed everybody else, and they were so free from race-prejudice that the colored cook was included in these osculations. It was in these surroundings that Matthias developed his theory of "spiritual wedlock," which he passed on to the Mormons. There it was modified and developed to fit their own needs.

T. S.

MENACME, Kisch's term (from the Greek *men*, month, and *akme*, top) to denote the height of woman's sexual activity.

Enoch Heinrich Kisch (*The Sexual Life of Woman*, 1904): "By the term *menacme* I designate the culmination of the sexual development of woman, during which the processes of reproduction, copulation, conception, pregnancy, parturition, and lactation occur."

MENARCHE, Kisch's term (from the Greek *men*, month, and *arche*, beginning) to denote the establishment of woman's sexual activity.

Enoch Heinrich Kisch (*The Sexual Life of Woman*, 1904): "The term *menarche* was introduced by me into medical literature to denote the period of life in which, as a sign of puberty, menstruation first makes its appearance."

MERCURIALIS, or the **MERCURY HERB**, a genus of plants of the widely-distributed family of Euphorbiaceae. From ancient times the herb was considered effective in regulating menstrual disorders, and was believed to possess the power of determining the sex of the child, depending upon whether the mother drank the juice of the male or the female plant. In this connection there has been a botanical tragedy, since the sexes of the plant were confused: hence the male plant of *Mercurialis annua* is still known as Girl's mercury, and the female plant as Boy's mercury.

METABOLIC THEORY OF SEX, commonly called **GOLDSCHMIDT'S THEORY**, though announced in 1920 (by Richard Benedict Goldschmidt, born April 12, 1878 at Frankfurt am Main; Professor of Zoology and Comparative Anatomy, University of Munich 1904-09; University of Tokyo 1924-1926; in charge of genetics and heredity, Kaiser Wilhelm Institute für Biologie, Berlin-Dahlem 1926-), did not become well-known among English-speaking scientists until the translation of his work appeared in 1923. A dispute soon arose between the followers of Riddle and Goldschmidt as to who had the prior claim for its promulgation.

All biological workers are familiar with Morgan's work demonstrating that the so-called sex chromosomes are the determiners of sex. Morgan's explanation is a qualitative one. Goldschmidt has devised a quantitative theory now known as the "metabolic theory of sex." In this theory, sex is determined by the rate or level at which metabolism takes place in the embryo. The theory, however, takes no account of metabolism, as such, but simply of the rate of metabolism. One may probably best explain the theory by presenting the various causes which brought it forth.

(1) Oscar Riddle of Cold Spring Harbor performed a number of experiments with pigeon eggs some years ago which well exemplified this metabolic theory. The pigeon lays two eggs, the first one laid always developing into a

male, while the second develops into a female. Riddle carefully analyzed the eggs and found that the male producing egg not only contained less stored food than the female producing egg, but that it also contained more water and, as a consequence, such eggs had a higher rate of metabolism and a higher oxidizing capacity than the female producing egg.

(2) David D. Whitney performed experiments with a rotifer, *Hydratina senta*, which animal lays two kinds of eggs, large ones which develop parthenogenetically into females, and small eggs, which develop parthenogenetically into males. It was observed that when this rotifer was fed green flagellates it laid small eggs, whereas when it was fed with colorless flagellates it laid large eggs.

(3) R. Hertwig had kept eggs of frogs for quite a time before fertilizing them. They thus became overfilled with water before fertilization. A predominance of males resulted. Miss Helen King of the Wistar Institute performed a somewhat similar experiment on the eggs of toads. She kept them away from water, however. These eggs, therefore, contained very little water before fertilization and a predominance of females resulted from her experiments.

(4) Goldschmidt came to the conclusion that certain substances in the fertilized ovum produce the two sexes and that these substances influence the rate of metabolism. He calls the substance which produces maleness *Andrase*, and that which produces femaleness, *Gynase*. Goldschmidt's principal experiments consisted in crossing German and Japanese races of moths. Sometimes he got males and sometimes all females. At other times he was able to obtain all intermediary stages; this of course, refers only to so-called secondary sexual characteristics.

One may summarize the differences between the chromosome theory and the metabolic theory as follows:

CHROMOSOME THEORY

Sex is determined at fertilization.

Sex is fixed.

Cause of sex lies in the chromosome mechanism.

METABOLIC THEORY

Sex is determined at an early stage in the embryo.

Sex can be modified.

Cause of sex lies in the metabolic rate.

Goldschmidt apparently holds that in the fertilized egg, after maturation, there are always determiners present in the chromosomes for both characters, maleness and femaleness, blackness and whiteness, or whatever the opposing characters from the two parents may be. If, for example, a fertilized egg shows an X-chromosome, which we know from previous experimentation, causes femaleness, a chromosome bearing the determiner for maleness is also present in the same fertilized egg. He holds this statement to be true even though that chromosome may not yet have been discovered, and it is the *metabolic struggle* between the two which determines the sex, as well as all the other characteristics of the individual.

If the metabolic rate of the X-chromosome is 100 per cent, then a 100 per cent. male will result, while if the metabolic rate of the X-chromosome is but 90 per cent, then the metabolic rate of the opposing chromosome (which may not yet have been discovered) is, of course, 10 per cent, resulting in a creature not 100 per cent. male. Such a creature, although a male, will have some *female* characteristics.

The theory holds thus, that such variation in the rate of metabolism may continue to a point where the rate may approximate a 50-50 level. Since, however, sex has but two alternatives, one can not obtain a perfect 50-50-level individual. In characteristics aside from sex, such a percentage may be possible. The theory really seems to explain many of the intersexual stages, and may furnish an explanation of those characteristics which do not seem to obey the Mendelian law of dominance.

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E. J. v. K. M.

MIGRAINE (Greek, *hemi*, half; *kranion*, skull), a neurosis characterized by terrible headache—the “sick headache” of the public—vertigo, nausea, vomiting which sometimes brings relief, noise in the ears and disturbances of vision. As the pain is usually one-sided, the older writers applied the term *hemisrania* to this paroxysmal condition. The periodical attacks are mainly in the course of the fifth nerve. The malady, even if prolonged and severe, does not cause mental impairment; the astronomer Airy and the physician Wharton Sinkler have been among its numerous distinguished victims.

The etiology of migraine, as of so many other diseases, is imperfectly known. A neurotic heredity is held responsible in 90% of the cases (Möbius); amid many hypotheses, are the *reflex theory* in which a pathologic state of the sexual organs is considered the causal factor; and the *neurogenetic theory*, in which migraine is attributed to psychosexual disturbance. In both sexes, migraine begins usually at puberty, and tends to disappear after the menopause in the female and the climacteric in the male.

MITZI-MITZI. Name given to sexual intercourse by the aborigines of the Friendly or Tonga Islands.

MIXOSCOPIA. Pleasurable excitement caused by watching others engaged in sexual acts. The term is derived from the Greek *miris*, intercourse, and *skopeo*, I look at, or I view. Called also *Scoptophilia* (love of seeing) and *Voyeurism*.

MODESTY-APRON. Name given by anthropologists to the covering of leaves, bark, etc., which the women of certain primitive tribes put over their pudenda.

MONS VENERIS, or Mount of Venus, is a triangular eminence, consisting of a subcutaneous cushion of fat over the genital cleft. At puberty the mons begins to be thickly covered with hair. As the pubic hair is sparse in anthropoids, and attains full development only on the mons veneris and labia majora of woman, it is specifically a human characteristic. The embryologist of the Renaissance, Fabricius ab Aquapendente, suggested the purpose of the pubic hair was to save the skin from friction during coitus. The "sacred triangle," with its profuse growth of hair, is of great esthetic value, and may be considered to have developed as the result of sexual selection.

The 17th century lyricist, Robert Herrick, the Catullus of England, refers to the mons veneris in one of his several songs *To Dianeme*:

*Shew me thy feet, shew me thy legs, thy thighs;
Shew me those fleshie principalities;
Shew me that hill where smiling love doth sit,
Having a living fountain under it;
Shew me thy waste: then let me there withall,
By the assention of thy lawn, see all.*

In palmistry, the fleshy ball of the thumb above the line of life is called the Mount of Venus.

The German term for the mons veneris is Venusberg, a word which went around the world in the "Venusberg music" of Richard Wagner.

MORGENGABE (German). A gift made by the bridegroom to the bride on the morning after the nuptial night. The custom dates back to the Franks and the times of the Salic Law, when marriage was consummated by the symbolic payment of a sou to the bride on the wedding night, as the price of her virginity, followed by the *Morgengabe* the next day, when the husband would assign a dowry to his wife, by casting a blade of straw upon her breast and by taking the little finger of her left hand.

Paul Lacroix, *History of Prostitution*, Part iii, Ch. iii.

MORMONISM, SEXUAL ASPECTS OF. Contrary to the popular belief about Mormonism, its polygamy was not permitted to all. The permission and duty to practise polygamy came as a spiritual reward and discipline for the elect few, faithful and super-righteous ones. At the time when polygamy was suspended (about 1896) Utah had a population of about a quarter of a million and probably never had over twenty-five hundred polygamous families.

As a matter of practice, Mormon polygamy seems to have had its beginnings in the adultery of the Prophet Joseph Smith, soon after the organization of the Church in 1830. Its spiritual interpretation and theological justification were doubtless an elaboration of similar spiritual theories and moral theology from Matthias the Prophet. Smith's theological elaborations began after a brain-storm on the part of his wife, which was occasioned by her discovering the Prophet's adultery. Then (1843) the Prophet claimed to have received a prior revelation, evidently designed to appease the wrath of Emma. This revelation was kept more or less of a secret from the godless and those of weak faith, until made public by Brigham Young in Utah.

Mormon moral theology included a divine sanction for incest for some of the elect. In a deceptive way this spiritualized polygamy was also defended as a cure for the problem of prostitution. The Reorganized Church of Jesus Christ of Latter Day Saints, sponsored by the son of Joseph Smith, in opposition to the leadership of Brigham Young, repudiated the alleged revelation on polygamy and the leadership of Brigham Young. The Reorganized Saints justified their position by pointing to the fact that there were no children of Joseph Smith by any of his many alleged polygamous wives. To this claim the non-Mormon answer was

made that so long as polygamy remained a secret doctrine of the few, abortions were resorted to as a means of perpetuating that polygamy.

The Mormon argument ran as follows: We all have within us a tangible portion of the Deity because we are created in God's image. It is the Deity within us that causes increase, and therefore it is our capacity for increase that measures our exaltation or progress toward becoming gods; and each added wife is but an added means of exaltation in the celestial kingdom. We are created for the express purpose of increase.

If begetting pious children in the greatest number is our conception of man's highest duty toward the head God, then naturally, since the gods are always but man's objectified ideals, God is represented as a polygamist, as also is Jesus Christ. The marriage at Cana of Galilee is proclaimed the marriage of Jesus to Mary, Martha and others. Of course it would be senseless to have a polygamous God unless he could procreate godlets.

Procreative powers, therefore, are not only god-given, but god-like. Progeny is the direct off-spring of God. Accordingly the gods are represented as possessing all the parts and passions of a perfect man. Gods, angels and men, are all one species, one race, one great family, and Joseph Smith is as much the son of God as is Jesus. The gods have power to beget sons and daughters in the spirit world, who by occupying temporal bodies of flesh and bone, are themselves prepared for godhood. Like the greater god, their father, they will each become possessed by the godly power of propagating their species through all eternity.

Psychoanalysts derive some support for their theories about incest by reference to the justification of incest by Brigham Young and other Mormon leaders. One Mormon married both his own daughter and granddaughter. Other men married widows and their daughters by the former husband.

Similarly there were marriages between brother and sister, and between children of the same father, by different polygamous wives. Like many other denominations, Mormon leaders sought to restrict marriages to those of their own church. Outsiders were not allowed to marry for eternity in the Temple. Of course all the peculiarities of Mormon theology were given a supplementary justification from the Bible, especially the Old Testament.

Proxy husbands and progressive marriages were among the devices designed to make spiritual seductions easier for the leaders, because of the bestowal of privileges upon the elect among the women. The Mormons accepted vicarious sin through Eve's eating of an apple, and vicarious salvation through the suffering of Jesus. In polygamy, Brigham Young and his fellow-leaders extended the theory of sin and spiritual salvation by proxy husbands.

Mormons also accepted the divine command to multiply and replenish the earth with progeny. The commandment did not excuse the woman from this obligation merely because her husband was absent for a couple of years on a religious mission. All Mormons must serve as missionaries. Therefore it became all right for the lonesome wife to bear children to her absent husband, through the ministrations of a proxy. Since only the pure in heart can perform such spiritual functions, and the sanction of ecclesiastical authorities was necessary, the husband's proxy was usually some one who was the husband's ecclesiastical superior.

Out of this situation there was easily evolved the theory of progressive marriage. That meant, that every wife, even without her husband's knowledge or consent, might be married ("sealed for eternity") to any man who was her husband's ecclesiastical superior. If the first husband was sufficiently faithful he might know about it, and would accept the fact as his religious duty. If his faith was too weak for that, then his lack of faith would justify deception.

So naturally enough came the distinction between husbands for time and for eternity. The husband for eternity will be the spouse in heaven, where, after the resurrection of the bodies, he will beget an eternal progeny. Over this progeny, he will be king and his various wives will be queens, forever. In the resurrection each head of a polygamous family will be transplanted with his polygamous wives to some world of his own. He will be the god of that world, even as Adam would have been god, the eternal ruler, on our earth, over his own innumerable and eternal progeny, provided he had not brought sin and death to us by his eating of the forbidden fruit.

Those whom the Mormon priesthood have not permitted to comply with the sacred ordinance for eternal marriage, and those who have wilfully foregone the duty to multiply and replenish the earth, will in heaven be only "ministering angels," that is a sort of celestial scrub-woman to the more exalted Mormons. So these unfortunate ones will remain eternally in servitude to the polygamous hierarchy, and be without queenhood or hope of heavenly sexualism or eternal spiritual progeny.

T. S.

MULATTO, THE. The Mulatto, in the strict sense of the term, is a first generation hybrid of a Negro woman by a white man, or of a white woman by a Negro man. Usage has broadened the term to include all persons of mixed Negro and white ancestry without reference to the generation of hybridization and without regard for the proportion of Negro blood. In the census procedure of the United States, the general principle of classification has been to report as mulattoes all Negroes showing any perceptible trace of white intermixture. This expedient is in the nature of a compromise between a biological and a sociological conception.

The crux of the definition is social: the mulatto is not a man of mixed Negro and European ancestry but one who bears visible, external, marks of his bi-

racial origin. In the sociological usage, the emphasis falls upon the personality consequences of intermixture rather than upon the biological fact itself: the mulatto is any individual of mixed blood, regardless of proportions, who so considers himself or is so considered by those among whom he lives.

The Negroes have mixed freely with the Europeans wherever the two races have been in close or continuous contact, hence individuals of mixed Negro and European ancestry are numerous and widely distributed. The chief mulatto populations are those of the United States and South Africa. On the islands of the Caribbean Sea and in Brazil there are considerable mulatto populations though the mixed-bloods of these areas are for the most part three-way crosses of Indian, Negro, and white with Indian blood predominating.

Most of the recent biological study of the mulatto as of other mixed-bloods has been from the Mendelian point of view with the interest on the determination of heritable traits and the manner of their transmission. The great variability of the bodily traits of man, the small size of human families, the few generations available for study, the uncertain composition of the ancestors of mixed-blood individuals, and the hypothetical character of the traits and ratios are factors impeding the progress of such study. Certain of the earlier researches, assuming a knowledge of traits and operating on a somewhat mechanical conception of trait transmission, arrived at fairly definite and somewhat dogmatic conclusions. In the later researches the results are essentially negative. The occupation of a more critical standpoint and the use of more refined and accurate procedure have shown the earlier conclusions to be generally untenable, but the recent studies have contributed relatively little to a positive understanding of the hereditary mechanisms in racial crossing.

The great difficulty in the study of human genetics is the uncertainty of ancestry. In the present this is an in-

superable obstacle that invalidates all genealogical studies of racial hybrids. A knowledge of and an ability to trace descent is largely responsible for the spectacular growth of modern genetics. But in the human groups genealogy is a poor tool. There is a relative absence of accurate genealogical records and knowledge. The derivation of the ancestral stocks is an unknown quantity owing to the mixed character of all races. In the case of mulattoes, the individual ancestors cannot, except in rare cases, be traced for even two generations; the recorded genealogies and the genealogical statements are too inadequate and inaccurate to serve as a basis for scientific procedure. All in all the biological study of mixed-blood groups, while its value should not be underrated, has not yielded notable results.

Primary crosses of Negroes and Europeans are relatively rare and mulattoes in the technical biological sense are few in number and have been little studied. The research evidence is scanty and the findings inconclusive. In general the hybrids in their physical characters are roughly intermediate between the Negro and the white though there is a considerable degree of variability in measurable traits. The complexion is usually brownish yellow, a blend in a statistical sense of the pigmentation of the parents. Whether or not it is a blend in the genetic sense of the term is uncertain; but certainly it is not in accord with simple Mendelian heredity or even multiple Mendelian heredity with two or three factors. The hair color, possibly correlated in inheritance with skin color, is intermediate between the European and the Negro. The eye color seems commonly to be a heterozygous hazel or brown. The shape of the hair, and in general the other physical traits, are intermediate, though not necessarily midway, between the white and the Negro.

In the general mulatto population, the mixed-blood individuals in the generations following the primary cross, the physical features are indefinitely vari-

able: the various traits vary from the Caucasian to the Negro according to the proportions of European and Negro blood. Undoubtedly the laws of inheritance vary for different traits but few if any laws have been stated with finality. In a few cases, notably eye color, inheritance appears to follow the simple Mendelian formula: heterozygous brown eyed parents, descendants of a brown eyed and a blue eyed parent, producing blue eyed and brown eyed children in the ratio of one to three. But the data are very fragmentary and the conclusions are not derived from direct study of Negro-white crosses. With such minor exceptions, there appears to be no tendency to a segregation of genetic types and no consistent deviation from a median position.

There are various widespread popular ideas in regard to the biological superiority or inferiority of the mulattoes to one or the other or both of the ancestral types. Such assertions are in the nature of evaluations, hence reduce to matters of definition. These beliefs seem in all cases to be mistaken. The ancient tradition that mulattoes are sterile is wholly without foundation: there are no types of race crossing that are known to result in sterility, and the mulattoes are known to be indefinitely fertile in all degrees of crossing.

The stock breeders' doctrine of "hybrid vigor" is a variation of the belief that crossing produces sterility. The doctrine maintains that crossing increases biological efficiency for one or two generations after which there is a decline in fertility and an eventual sterility. The general belief is without sound evidence in its support and its special application to the mulattoes is in apparent defiance of the historic reality. The claim that crossing results in genetic disharmonies, the appearance of incompatible traits, is not established and probably is without validity. So far as the genetic evidence goes, neither the desirability nor the undesirability of European-Negro crosses can be asserted.

There is at present no means for a quantitative determination of mental traits. It is impossible, therefore, to give precise and satisfactory data in regard to the mental traits of mulattoes. The various types of "intelligence tests" give a limited body of inferential data. By means of these tests it is possible to compare the achievements of children in special lines. Where they have been used to compare Negro and white children, they have usually indicated a racial hierarchy with the mulatto children below the white children and above the Negro children and approaching the one or the other according to the proportion of white and Negro blood. But ability to score in these tests is in part determined by traditional endowment and by the training and education of the children: the differences in the scores decline as approach is made toward equalization of social environments.

Similarly, the race differences decline or disappear to the extent that the cultural variable is held constant. At the present time, the more competent opinion is that no essential difference in racial intelligence, either quantitative or qualitative, has been proved. Where such differences are reported they seem always subject to explanation in cultural terms, hence do not prove innate mental differences. Beyond this essentially negative position it is not possible to go in the present state of research.

The mulatto element of the American population had its beginnings very shortly after the first introduction of the Negroes. The first legislation concerning slavery in the different colonies consisted in acts, not to establish slavery or to provide a legal basis for the institution, but to determine the status of mulatto children and to regulate racial intermarriage and sex relations. The enactment of these laws in each of the colonies makes it evident that mulattoes were present. There is no exact information in regard to numbers but the presumption is that intermixture was relatively rapid during the early period. There was a paucity of white

women, a condition conducive to intermarriage and irregular sex relations. In certain of the colonies there was a numerous population of indentured servants of low social status who fraternized freely with the Negroes.

The scanty positive evidence is in line with the presumption of rapid increase. In 1775, Maryland reported a Negro population of 46,356; of whom 3,592, about 8 per cent, were mixed bloods. There is no reason to assume that Maryland was not typical of the colonies in regard to race mixture. The rate of intermixture probably somewhat decreased during the period of national slavery; the disciplinary control of the slaves was more strict and efficient, and a bitter antagonism developed between the Negroes and the poor whites as the system of indenture declined and the slave states was clearly defined and restricted to Negroes. There was a second period of rapid intermixture following the Emancipation due to the sudden removal of external control and the consequent disorganization and the increased mobility and contacts of the peasant Negroes.

In the enumeration statistics the term mulatto is used in a generic sense to include all persons, except full-blood Negroes, with any perceptible trace of Negro blood. Six attempts have been made to enumerate this mulatto element with the results shown in the accompanying tabulation. Because of enumeration difficulties the figures give the appear-

Census Year	Total Number	Per cent of Negro Population
1850	405,751	11.2
1860	588,363	13.2
1870	584,049	12.0
1890	1,132,060	15.2
1910	2,050,686	20.9
1920	1,660,554	15.9

ance of irregular growth but they show the increase over the whole period to have been rapid and continuous.

The claim is frequently made that the mulattoes are much more numerous than the enumeration figures show: the percentage of mulattoes in the Negro

population has been estimated as high as seventy-five and eighty per cent. All such estimates seem to be the result of an alternative definition of the mulatto: in a fundamental sense they are attacks upon the census definition rather than upon the enumeration figures. On the basis of the definition adopted, the Census figures may be accepted as approximately accurate.

The percentage of mulattoes in a total Negro population increases as the proportion of Negroes to whites decreases or, stated differently, the number of mixed-bloods varies inversely with the percentage of Negroes in the total population. This is in accord with the general law that racial intermixture is directly proportional to the opportunities for racial contact. In the United States the mulattoes are and have been at all periods relatively more numerous in the North and the West, where the Negroes constitute a small percentage of the population, than in the South, where they are numerically as well as in percentages an important part of the population.

The contrasts in ratios among the states stand out sharply: about one-half of the colored in the non-slave-holding states were mulattoes as against one-ninth in the slave-holding states. In Ohio there were more mulattoes than full-blood Negroes and the same distribution prevailed in the Territories. Certain special historical considerations operated thus to swell the percentage of mulattoes in the North and West beyond the normal expectation. The laws of the Northern states providing for the abolition of slavery were designed to abolish slavery in these states rather than actually to free the slaves held therein. The clauses specifying a future date after which no person could be held in bondage made it possible to sell the northern-owned Negroes into the South before the laws became effective.

In the disposition of the slave property, some masters actually freed their slaves, others sold them into territory where slavery was still lawful. In the transition the mulattoes profited: the

black Negroes were more often sold to slavery in another state; the mulattoes, especially the owner's mulatto relatives, were more often freed. The later importations of slaves, practically all full-blood Negroes, also operated to lower the relative percentage of mulattoes in the South. These importations were into the southern states; the northern and western sections of the country received no new slave importations after the late eighteenth century.

The ratio of Negroes to whites was less in the North and the relative number of Free Negroes was greater. As a result of these two conditions, which gave more opportunity for contact and clandestine association, there was always relatively greater intermixture than in other sections. Finally, the Free Negroes, a large percentage of whom were of mixed parentage, drifted to the free states of the North and the West. Often the slaves were taken or sent into free territory to be manumitted. These manumitted slaves were often mixed-blood relatives of the owner.

At all periods the proportion of mulattoes has been greater in the urban than in the rural areas; the mulattoes are a city population both in origin and in settlement. The more rapid increase of the mixed-bloods in the cities and towns is a special case under the general rule that racial intermixture is proportional to the opportunity for clandestine contact. The cities and towns offer more opportunity for contact, there is less restraint, and it is relatively easy to conceal relationships. Public sentiment, which everywhere disapproves racial intermarriage and intermixture, is less effective as a control. Moreover, the Free Negroes during the slavery period drifted to the cities and these classes were often largely mulatto.

In the urbanization of the Negroes that has continued in the decades since the Emancipation there has been continued selection on this basis. The enumeration data are not adequate to a definite quantitative statement. But the figures give the percentage of mulatto to full-blood Negroes by states and large cities. In 1860, the Negro population of Georgia was 8.2 per cent

mulatto; in Savannah, the chief city of the state, 18.1 per cent of the Negroes were mulattoes. In Louisiana 11.0 per cent of the Negro population was mulatto while 48.9 per cent of the Negro population of New Orleans was so reported. Of the South Carolina Negro population 5.5 per cent was mulatto while 25.2 per cent of the Negro population of Charleston was of mixed blood.

The percentage differences appear to be less now than formerly, but the appearances are probably deceptive since distinction is not made between urban and rural but between the large cities and the state as a whole. If it were possible to separate urban and rural areas, the differences would be greatly increased; the mulatto population seems to be chiefly urban.

The social status of the mulattoes has at all times been superior to that of the full-blood Negroes. Several factors contributed to the initial superiority and to its perpetuation. Some considerable number of the early mulattoes were children of white women and had the advantage of a white mother's care. In a great many cases the mulatto children of Negro women had somewhat superior advantages owing to the white father's interest. Within the slave population, the mulattoes were generally favored. They were in many cases children or close relatives of the slave owner.

Aside from the fact of relationship to the owner, the mulattoes were generally believed to be more intelligent than the full-blood Negroes; they commanded a higher price in the slave market and were in demand for certain types of occupations. Also their appearance was in their favor: approaching somewhat nearer to the white group in physical features, they were more pleasing to the whites in close association. The two facts, physical appearance and assumed superior native intelligence, led to a differential occupational placement favoring the mulattoes. They were chosen for tasks requiring some degree of intelligence and skill. They were generally preferred as house and personal servants. Chosen for work in the trades or for personal servants, they received the education and training necessary to fit them for the positions, and the performance of their duties brought frequent

and continuous contact with the white master class.

The mixture of blood also operated to the advantage of the mulattoes in the matter of freedom. Since the status of the child followed that of the mother, some of the mixed-bloods were free. Because of blood relationship to the owner or for other reason, a larger percentage of the mulattoes than of the black Negroes were manumitted.

There was always a preponderance of mulattoes in the free Negro population that grew up during the slavery period. In Maryland, as early as 1775, there were 3,608 mulattoes in the population of whom 1,460 were free and 2,148 were slaves. In 1850, the mulattoes were about one-eighth as numerous as the blacks; the free mulattoes were more than half the number of the blacks while the slave mulattoes were only about one-twelfth of the slave blacks. The total mulatto population was 405,751 of whom 159,095, about 40 per cent, were free. The total number of free Negroes in 1850 was 434,495. Of these 275,400 were full-blood Negroes and 159,095 were mulattoes. At that time the mulattoes constituted only 11 per cent of the total Negro population: 405,751 mulattoes and 3,233,057 full-blood Negroes. Thus about 40 per cent of the mulattoes were free as against about 8 per cent of the full-blood Negroes. In the slave states in 1860 about 10 per cent of the slaves and about 40 per cent of the free Negroes were mulattoes.

The percentages were subject to considerable local variation: in Richmond there were more free blacks than free mulattoes; in Charleston the bulk of the free Negro population was mulatto, there being only 891 free blacks and 4,587 free mulattoes.

The superior advantages enjoyed by the mulattoes because of freedom, association with the whites, more education and training, traditions, greater mobility, and the like made the mulattoes superior men. The whites, considering the mulattoes innately superior, gave them advantages that made them culturally superior. Taking over the white man's way of thought, the mulattoes considered themselves superior to the black Negroes and attributed their superior status to their white blood. The superiority of status and the belief in their innate superiority gave the mulattoes a degree of self-confidence not possessed by the black Negroes. Moreover,

the mulattoes enjoyed prestige among the Negroes: taking over the white belief in mulatto superiority, the black Negroes accepted the mulattoes as their innate as well as their cultural superiors.

This initial advantage in cultural opportunity expressed itself in superior accomplishment: throughout the period of Negro residence in America, the mulatto segment of the group has furnished a disproportionately high percentage of all the Negro individuals who have risen to prominence. In the period of slavery the few individuals of Negro blood who became known because of activities or accomplishments beyond the capacity or opportunity of the Negro generality were, with only two or three exceptions, mulattoes. There was a similar preponderance of mixed bloods among the Negroes who achieved political prominence during the Reconstruction period. In the present generation, the Negroes of attainment in business as in professional and intellectual pursuits are nearly all mulattoes and generally mulattoes with more white than Negro blood.

The superior attainment of the mulattoes is adequately explained in cultural terms: there is no need to resort to the widespread belief that the mixed bloods are an innately superior group. Nevertheless, there have been certain factors operating selectively to raise the biological worth of the mulatto group. The white man's assumption of mulatto superiority, aside from any question of the accuracy of the assumption, gave the mulattoes prestige within the Negro group. There have been persistent efforts on the part of the mixed bloods to avoid association with dark Negroes.

In some cases, notably in Charleston and New Orleans, there were sharply differentiated mulatto societies long before the Emancipation. The refusal of the dominant whites to recognize this potential caste prevented the cleavage between the Negroes and the mulattoes from becoming a hard and fast color line. The social and cultural superiority of the mulattoes in the presence of

their inability to form a closed caste has operated, through the medium of marriage selection, to bring the conspicuously successful black men into the mulatto class. Of the economically and professionally successful Negroes and dark mulattoes approximately seventy-five per cent have chosen wives from the mulatto group. In all these cases the children are mulattoes and whatever superior native ability they may inherit from their Negro fathers remains in the mulatto group. Such selective marriages may operate through the course of generations to build up a genetic foundation for a class superiority that in the beginning was purely social: the myth of superiority may operate to produce a fact of superiority.

The rôle of the mulatto in the interracial situation is determined for the most part by facts and conditions in the social situation, by facts outside the group and over which the group exercises no control. The desire, conscious or unrecognized, of the mixed bloods is to be identified with the culturally superior group and to share its life and work and civilization. The opportunity to realize this status in whole or in part depends upon the attitudes of the dominant group which, in turn, depend upon the historical traditions and exigencies of the current social situation.

If the attitudes of the dominant group are tolerant, or if the insecurity is such that tolerance is politically expedient, the mixed-blood individuals are able to achieve or approach the status of men of the dominant group. In Brazil the mulattoes are or may be for all essential purposes a part of the advanced culture group; so far as a color line is drawn it falls between the mixed bloods and the Negroes and Native Indians of unmixed ancestry. In Cuba the hybrids of differing shades are a physiological as well as a cultural bond between the pure-bred Spaniard and the full-blood Negro: there is no sharp line between the whites and the mulattoes nor between the mulattoes and the Negroes. The mulattoes are ac-

cepted into the less exclusive grades of white and near-white society in proportion to their success in life and to their approximation of the Spanish caste of countenance.

Where an intolerant racial attitude arbitrarily excludes all mulattoes from membership in the dominant group, the mixed bloods develop a special caste or find place in the culturally lower group. In Jamaica the tendency of the mulattoes to form a separate class when denied social equality with the whites has been fostered and the mixed bloods developed into a middle-class that functions as a buffer between the whites and the Negroes. In South Africa the mulattoes are an intermediate culture group separate from both the whites and the natives but with no rôle in the racial situation. In the United States, in spite of the general assumption of innate superiority of the mulattoes and in spite of the obvious cultural and economic superiority, there has been a consistent refusal officially to recognize them as a separate caste in the population. They are in general accommodated to the classification as Negroes and function as leaders of the racial minority.

The personality traits of the mulattoes are a function of the status and rôle determined by the institutional and traditional obstacles to free cultural participation. So far as the mulattoes accept the cultural identification with the Negroes demanded by the overgroup, they display no personality traits of distinctive type; as they are identified in interest and sentiment with the Negroes, the sociological traits of personality that characterize them are determined by their aristocratic status and leadership rôle in the Negro environment. In the situation they may be philistines, the adjustment to the status being one of expediency; or they may be creative men who achieve a status of full manhood in the process of realizing their wishes through a re-creation of the situation.

The individual who is unable to re-

solve the conflict between personal wishes and social taboos can make neither a philistine nor a creative adjustment. In a fundamental sense he is a member of different and exclusive groups: as an aspirant for membership in the dominant group, he adheres to its ideals and standards; as a member of a special caste or of an excluded minority, he embodies the ideals and standards of that group. He is in consequence a man of divided loyalties, an individual who epitomizes the external conflict of opposing groups. The subjective conflict is irresolvable so long as the mulatto is excluded from the idealized group and remains unaccommodated to membership in the other.

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MULE, the hybrid offspring generated from the cross of equine and asinine species. The offspring of jack-ass and mare is the mule proper; the offspring of stallion and she-ass is the hinny (Varro, ii, 8: "The produce of a mare and male ass is a *mulus*, of a horse and female ass a *hinnus*").

The barrenness of the mule is so notorious that it was considered a prodigious event if a mule foaled (Herodotus, vii, 57: "There was another portent shown to him at Sardis, a mule gave birth to a mule"; Juvenal, xiii, 66: "If I discover an upright and blameless man, I liken him to a pregnant mule"). In discussing the union and similar, and yet unlike, animals, Aristotle (*de generatione animalium*, ii, 7-8) observes: "Of the animals that arise from such union all except mules are found to

copulate again with each other and to be able to produce young of both sexes, but mules alone are sterile, for they do not generate by union with one another or with other animals. The problem why any individual, whether male or female, is sterile is a general one, for some men and women are sterile, and so are other animals in their several kinds, as horses and sheep. But this kind, that of mules, is universally so. . . . The reason has not been rightly given by Empedocles and Democritus, of whom the former expresses himself obscurely, the latter more intelligibly." Aristotle means that these philosophers should not have attempted to prove that all hybrids are barren, for many hybrids have the power of generation.

Although the mule is manifestly neither horse nor ass, it is one of the most remarkable products of artificial selection, as in some qualities the mule is superior to either of its parents.

Herodotus, iii, 153; vii, 157.—Aristotle, *Historia Animalium*, vi, 23, 24, 36; *De Generatione Animalium*, ii, 7-8. Aristotle's knowledge of mules was profound; however, he refers to the dwarf mule or *ginnus*, as the possible offspring of a mule and a mare. "But there is no such thing," remarks Aristotle's translator (Arthur Platt), and concludes the whole discussion of the infertility of mules with the weary dictum, "Mules are fertile of fiction if of nothing else."—Varro, ii, 8.—Columella, vi, 37.—Juvenal, xiii, 66.—Suetonius, *Galba*, 4.—Pliny's chapter (viii, 68) is compiled mainly from Aristotle, Varro, and Columella.—The Mysians and Paphlagonians (Asia Minor), who played only mute and meager rôles in ancient history, are credited with being the earliest mule-breeders; the most important mule-breeding center of Europe is France (Poitou and the Pyrenees); the Kentucky mule is famous in the United States; another well-known breed is the sturdy Mexican mule, offspring of a male ass and a mustang mare.

MUNIMENTUM CASTITATIS (bulwark of chastity), the hymen.

MUTATIO SEXUS, the mutation or change of one sex into the other. The speculations of the ancients on the possibility of such conversion or alteration have deliberately been fulfilled, in the case of some of the lower animals, by modern investigators.

MUTINUS (MUTUNUS). A name for Priapus, from *muto*, a rare, poetical term for penis (cf. Horace's *Satires*. i, 2, 68). The name also appears as TUNUS, with the same signification.

St. Augustine, *De civitate Dei*, iv, 11; Lactantius, i, 20; Arnobius, iv, 131 and 133. By transference, the word is employed for the penis itself, as by the *Auctor Priapeiorum*, 74.

NARRA-MANG (Youth-making). Native term applied to the virile initiation of adolescents among the Murrumbidgee, Murray, Owens and Goulburn tribes of Australia.

Brough Smyth, *The Aborigines of Victoria*, London, 1878, vol. i, pp. 58ff.

NEUROSIS, functional disease of the nervous system without an anatomical lesion. The contention of Freud, that a neurosis is the result of repressed sexuality, has revolutionized modern culture.

William Osler (*The Principles and Practice of Medicine*, 1892, 1935¹²; revised by Thomas McCrae): "Undoubtedly the part played in the production of neurosis by sex factors is of the first importance. Freud regards sexual trauma as the basis of hysteria, and he also regards neurasthenia as largely a product of disturbance in the sexual sphere. For him and his school the sex impulses furnish the basis of the psychoneuroses. Repressed as they have to be in so many in our modern civilization, without normal outlet, the thought formations, retained in the unconscious state, express themselves by means of somatic phenomena—the objective features of hysteria and neurasthenia. *Cherchez la femme* is a safe rule in investigating a neurotic male. Freud may have ridden his hobby too hard, particularly in the insistence upon the importance of infantile sexuality, but in recognizing the rôle of the younger Aphrodite in the lives of men and women he has but followed the great master, Plato, who saw, while he deplored, the havoc wrought by her universal dominance.

NYMPHAE, the lesser lips (*labia minora*) united at the clitoris and enclosed within the greater lips (*labia majora*) of the vulva.

Havelock Ellis (*Studies in the Psychology of Sex*, 1906 v. p. 49): "In the name *nymphae* there is generally believed to be a poetic allusion to the Nymphs who presided over streams, since the *labia minora* exert an influence on the direction of the urinary stream."

OBSCENA (singular, *obscenum*), the obscene parts or privates; genital organs.

Ovid, *Metamorphoses*, ix, 347: *Lotis in hanc nympe, fugiens obscena Priapus* (the nymph Lotis fleeing from the privates of Priapus).—Suetonius, Caligula, lviii: *Quidam etiam per obscaena ferrum adegerunt* (Some even thrust their swords through his privates).

OBSCENITY, LEGAL ASPECTS OF.

This is an attempt to show by our judicial decisions, that "obscenity" is not a quality of the things viewed or read, but merely an emotional attitude on the part of the viewing or reading person. Because this is so, our statutes against obscenity have uniformly failed to define the criteria of guilt. Unconstitutional judicial legislation was supplied by judges who sought to enforce these penal laws. The resulting judicial jargon, makes it still more obvious that no one can define "obscenity" in terms of the qualities of a book or picture.

In consequence of this, all such penal statutes should be held unconstitutional, because they attempt to deprive some one of liberty or property, without "due process of law." Here we will not discuss the constitutional question. Our presentation will be limited to the psycho-sexual factors, which it is believed must control the decision on the constitutionality of the law. Now we proceed to a critical report of the judicial declarations about "obscenity."

Let us begin with two cases, which involve letters that are wholly free from the "immoral" language which is presumably prohibited by the statute. These letters were written with the obvious purpose of bringing about meetings between the writers and the women to whom they were addressed. Inferentially they were written for the purpose of promoting future seductions or assignments.

One Court said: "To be obnoxious to the statute its language must be obscene, lewd, or lascivious, and it must be indecent in character. The statute does not declare that the letter must be writ-

ten for an obscene or indecent purpose, but that the letter itself, in its language, must be of indecent character. When the law denounces a letter containing obscene language, and does not denounce a letter decent in terms but written for an indecent purpose, an indictment founded only on the obscene purpose cannot be maintained." 73 Federal Reporter, 463. So far as this goes, the logic itself is good, but it does not help us to decide by what criteria to determine the existence of a criminally obscene content in the letter.

Confronted with a similar situation, another Court says: "The language 'go to bed with me' is itself neither obscene nor vulgar, and has never been so held. * * * Taken in connection with the *surrounding circumstances* in this case, the conclusion is very natural that the defendant intended this as a proposition to violate chastity. * * * As there is nothing vulgar or obscene in the language itself * * * I do not feel at liberty to embrace it by construction." (41 Georgia Rep. 279. See also: 85 So. West. Rep. 797).

A third case was based upon a letter from a married man to an unmarried woman, inviting her to visit a neighboring city with him. The purpose of the visit was not expressed, and the letter was wholly free from "immoral" language. In his decision the judge said: "The court cannot see how any other construction can be put upon them than that they are within the meaning of the statute. * * * It is difficult to conceive what can be more shocking to the modesty of a chaste and pure-minded woman than the proposition contained in these letters" (50 Federal Reporter 921). The judge can see only one consequence from the contemplation of this letter. He fails to see that his judgment is wholly based upon his own subjective self-defensive necessity, and not in the least upon the construction and application of any criteria of guilt furnished by the statute.

In effect this last decision is a flat contradiction of the two preceding ones. I repeat, not one of these contradictory

decisions is based upon any precise criteria of obscenity, either found in the statutes, or in the judicial legislation about "obscenity." The decisions in such cases express only different symptoms in the sexual psychology of the judges, whose temperamental needs, whatever they are, can be and are read into this uncertain statute. Nothing else is possible, when emotional epithets take the place of objective definitions or tests of "obscenity."

In "obscenity," as in other criminal cases, the Courts sometimes hold that, if there is no dispute about the thing which is alleged to be criminal, then whether or not it answers to that description is a question of the law for the judge to decide. That is the rule in all other cases, where of course, the statute states the criteria of guilt. In still other cases it has been decided that "obscenity" is wholly a question of fact, always to be determined by a jury. In one case it is held that: "Rather is the test what is the judgment of the aggregate sense of the community." Such contradictions could not be if the statute had prescribed the criteria of guilt.

Some courts say that the words *obscene*, *lewd*, *lascivious*, or of an *indecent character* are "convertible expressions, equivalent in meaning." Other courts have held that these words are not used interchangeably. The statute does not help us to decide which is correct, because it contains no definition of its vituperative words; no standards for judging what is criminal.

In reaching a conclusion about the obscenity of some accused publication, one would think that only a reference to the statutory criteria of guilt is permissible. But since the statute furnishes no criteria of obscenity, this cannot be done, and Courts have disagreed as to whether or not references and comparison with other and similar publications known to jurors, *but not introduced in evidence*, can be made as an aid to their judgment. That is to say, the juror may have a personal secret standard by which to judge the defendant's guilt. Since

the statutes furnish no criteria of guilt, it would seem to be impossible for jurors in any case to exclude from consideration such books or pictures as have been impressed upon their feelings. A genetic psychologist will think it impossible for any juror to do anything else than use a very personal standard of guilt. Therefore this law should be declared unconstitutional. A similarity in the results only means a similarity in the symptoms that are imposed upon and adopted for our mob-neurosis.

If the accused words do not of necessity imply and convey the suggestion of obscenity, then some courts will receive and other courts will reject, evidence aliunde, to eke out a case.

Again, the Federal statute uses the word "knowingly" in connection with mailing "obscenity." Since the quality of "obscenity," etc., is imponderable and undefinable, what is it that constitutes "knowingly"? He knows that he deposits a print in the mail. Must he also read and know its contents? Must it be presumed as a matter of law, that everyone who deposits matter in a mailbox knows its contents? Beyond that, must he guess infallibly what this or that judge or jury will think of its "obscenity" under a statute which does not define obscenity? If so, then one's criminality depends, not upon the contents of the letter or book: not upon any statutory standards; but upon the defendant's faulty knowledge of the psycho-sexual complexes of the particular persons, unknown to him, who some day in the future will be authorized to try him for mailing "obscenity."

Since the judgments about obscenity differ from person to person, and from one community to another, we may ask: What type of psycho-sexual complex has received the judicial approval? One judge used this language: "Sitting as the court does in this case, instead of the jury, it may not apply to the facts its own method of analysis or processes of reasoning as a judge, but should try to reflect in the findings the common experience, observation, and judgment

of the jury of average intelligence." (50 Federal Reporter 921). In other words, if the judge has a superior intelligence about the psychology of sex, he must renounce that and reflect the average ignorance of some hypothetical jury. But we have been taught that only the legislature can fix the criteria of guilt.

According to the last decision, a defendant would be convicted, not because he knew the book to be "obscene"; nor because he failed to guess correctly how the judge's psycho-sexual complexes would react to the book; but what guess the judge would make about the psycho-sexual symptoms of a purely hypothetical (that is, imaginary) jury of the future. And that is "law" and constitutes "due process of law"!!! According to the judicial wisdom or ignorance.

Another court said that "a book to be obscene must appear so to the mind of the pure, not of the impure merely." But who will sit in judgment on the jurors and judges, to discover the existence within them of the qualifying degree of "purity"? What is the test of the proper degree of purity, anyhow?

Although the statute says nothing about "immoral influence" as a test of "obscenity," some courts have unlawfully legislated that into the statute. Now it is not the inherent quality of the book that counts, but its hypothetical influence upon some hypothetical person. However, we still wish to know whose "moral" standard is to be applied? What type of person, with what degree of psycho-sexual morbidity, with what degree of general or sexual intelligence, shall we imagine as applying the test of "moral influence"? Or, as submitting to the test of being influenced to immorality by it? Moral standards are a matter of geography, personal age and intelligence, or relative psycho-sexual health or pathology, all rationalized with varying degrees and qualities of cultural acquisition and self-understanding. Now it appears as if the crime of "obscenity" consisted in not guessing right about all these unknowable, imponderable factors

in the psychology of the yet unknown future judges.

"Immoral influence" upon whom? Or upon what type of person? One court has said that the inquiry as to the tendency of the accused document must be limited to the liability of it to corrupt the actual recipients. Thus some courts hold that a physician, medical student, or clergyman, etc., may be presumed to be sufficiently immune against any further depravity of their "morals" and therefore may receive what is prohibited to others. Here another question presents itself, which has never yet received judicial attention. Is the presumption of immunity in members of the professional classes a *conclusive* presumption of law? Or may it be contradicted by evidence as to the character and suggestibility of a particular professional addressee? Must it be *conclusively* presumed that the non-professional addressee of an indicted book is not immune to a mental temptation provocative of sensual desires? Or, can it be shown by evidence that some of them are as immune as medical students and clergymen? Are sensual desires as such, immoral, or is it only those desires which eventuate in penalized sexuality?

It is officially held that you may sell or send to members of the learned professions and artists, what you cannot sell or send to others. Experts in sexual psychology may doubt that these privileged obscenists are necessarily beyond the temptations of the flesh. How can the book-seller know the fact? Or, is it determined by a *prima facie* or conclusive presumption of law? But again the book-seller is penalized for not anticipating correctly the speculative and problematical opinion of some future and unknown hypothetical judicial functionary, about the immunity to immoral influence of another hypothetical guess of the future, which immunity is determined according to unknown standards of "morality," and unknown degrees of pathologic suggestibility. That seems to have about as much certainty as our guess about the opinion of an imaginary

College of Cardinals, about the number of angels that can dance simultaneously on the point of a needle. And yet—and yet, judges who claim to be sane and are supposed to be intelligent, enforce such meaningless statutes, in the name of law and morals!

Other courts hold that the moral influence of the accused document must be judged "without regard to the character of the person to whom they are directed." "It must be calculated with the ordinary reader to deprave him." Another court, whose judge may have been more pathologically sensitive, decided that a "tendency to vitiate the public taste" is an element of the criminality. What is the lawful standard of taste? What degree of esthesiomania must be assumed? Only an "educated" moron could announce such a standard of criminality, or would attempt to.

Other courts have ignored actual immoral influence, and have said that it is enough if the accused document "have a *tendency to suggest* impure and libidinous thoughts in the minds of those open to the influence of such thought." Here then the standard is not the contents of that which is sent, or the intent of the sender, or its power for actual immorality, but its capacity to *suggest* libidinous thoughts to the most extreme case of psycho-sexual pathology. No! Not in fact that. In reality it is what a judge or juror may say is that, because of the unconscious processes of his own need, to defend himself against the secret accusations of his own guilty-inferiority feeling. This is "law" according to gentlemen whose black robes and solemn faces inhibit a sense of humor, and whose psycho-sexual complexes preclude them from understanding or co-ordinating the known facts of sexual psychology with the settled doctrines of constitutional law.

Another court held that the essence of the crime is that it is "offensive to delicacy." Apparently this judge acted as if he was too ignorant to know that sexual "delicacy" has many varieties, according to various degrees of psycho-

sexual pathology or healthy-mindedness. Probably there was sufficient intelligence to know that. However, the judge's probable unconscious guilty-inferiority feeling, prevented him from acting on that intelligence. If a line could be drawn between these different degrees of psycho-sexual delicacy, it should be drawn and defined in the statute, as a guide to citizens and jurors. Since it is not drawn there, and since Congress could not delegate this legislative power to the courts or to executive officers in the post-office department, the statute is unconstitutional. That it is not held to be unconstitutional can be explained only by means of the sexual complexes in the minds of judges.

Another court, as if unconsciously striving to be more ridiculous than the rest, made "*unbecoming*" the criminal quality or standard of "obscenity." Another court held that "unbecoming or even profane" language is not necessarily prohibited by the statute.

One court says that for obscenity "that which shocks the ordinary and common sense of men as an indecency is the test." In another case the judicial language is this: "The court *** must not allow a hypocritical judgment to take advantage of the elasticity of the language used by Congress *** by bringing within the act words and thoughts that are only rude, impolite, or not in good taste, according to standards of decency prescribed by the purists in language and thought." But our constitutional guarantee of "due process of law" prohibits an "elasticity of language" in the criteria of guilt in a penal statute. Why did the judge overlook that, and so fail to declare the "obscenity" law unconstitutional?

One court says that "there are in the language words known as words obscene in themselves." Another court says: "There is not a single word in the language, however coarse, low or vulgar, that may not be and is not often used to convey proper and decent ideas, and it is a mawkish and really an indelicate

and immodest sensitiveness that blushes at a word which may be used obscenely, but which the occasion and the context show not to be so used."

All these foregoing judicial efforts to supply wholly unlawful personal tests of "obscenity" only demonstrate that it cannot be done in terms of the qualities of that which is read, heard, viewed, or sent through the mails. It remains to find judges who are approximately free from the usual unconscious influences of sexual guilt, which Puritanism imposes upon each succeeding generation. Only such a judge can combine the understanding and the courage to declare these laws unconstitutional.

Theodore Schroeder: *Free Press Anthology* (1909); "*Obscene*" *Literature and Constitutional Law* (1911); *Free Speech Bibliography* (1922; viii, sex motive).

T. S.

OBSCENITY-PURITY COMPLEX.

Psychologically the obscenity-purity complex is but a special aspect of our conflicting attitudes toward sex, such as probably all persons experience in some measure. It is always basically a conflict between the lure and fear of sex. From this conflict come all of our irreconcilable moral theories and values. Some have this moral conflict with the involvement of emotions that are pathologically intense. These become the crusaders for both new and old moral codes. A pathologic intensity of the lure and fear over sex produces the extreme of Puritan zeal, which at the same time measures the intensity of the sensual lure for which that zeal is an unconscious mask and escape. The lure of sex may be so strong and shameful, as to exclude the physical factors from consciousness. Then the psychological consequences of sex are denied any connection with it. Unconsciousness of the sex lure does not preclude its obsessing influence in our unconscious mentation.

This unconsciousness of sex in the Puritan obsession, is not necessarily permanent. It often happens that the suppressed and "repressed" sensualism be-

comes conscious. Thus an extremely "pure" girl, later becomes a sexual maniac. This mechanism is exhibited in the case of a former wealthy director of one Society for the Suppression of Vice. His suppressed lure of sex finally broke through, and he was arrested while surrounded by a bevy of nude women. He was then taken to a sanitarium. Some psychiatrists would say that he should have been taken to that sanitarium when he first became an official "vice" suppressor. Because this last mentioned symptomatic act was in harmony with our dominant mob psychosis, it was not appraised at its true worth or meaning. His suppression and indulgence in sex were but different extreme symptoms of the same morbid inner conflict.

However, so widespread is the acceptance of the Puritan symptom of psycho-sexual pathology, that morbid puritanism is still thought of as moral idealism, and still passes for something of social value, rather than as a symptom of psycho-sexual disorder. When our present strivings toward mental hygiene cease to be a racket, the real mental hygienists will find the courage to attack our present, popular, and numerous moral superstitions.

The Washington psychiatrist, William Alanson White, has well said: "The man who expresses abhorrence for a certain act is much nearer the possibility of such an act himself than is he who can view it undisturbed and with a judicial attitude of mind; he therefore must summon all his reserves to escape it" (*Mechanism of Character Formation*). I would carry this theory a little further or rather make it more specific. I have found that like our physical energy, in the case of our psychologic enthusiasms, action and reaction, love and hate, are equal. I have found that the zeal of the Puritan or religious denunciation of any particular manifestation of sex, is an exact measure of the intensity of its lure for such a person.

T. S.

OESTRUS AND OVULATION

1. INTRODUCTION.
2. VAGINAL FLUID.
3. CELLULAR MOVEMENTS ACCOMPANYING THE CHANGES IN NATURE OF THE VAGINAL FLUID.
4. THE CYCLICAL CHANGES IN THE UTERUS AND VAGINA UNDERLYING THE CELL CHANGES IN THE VAGINAL SMEAR.
5. THE OVARIAN CHANGES AND THE CELLS OF THE VAGINAL SMEAR.
6. THE NATURE OF THE OESTROUS PROCESS.
7. HUMAN OVULATION.
8. BIBLIOGRAPHY.

Oestrus, commonly termed the "heat period" in the female mammal, is a definite physiologic state expressing itself through a passive willingness in some species, or an aggressive desire in others, to copulate with the male. Ovulation is the process of discharging the ovum or egg from its capsule, the Graafian follicle, in the ovary.

Ovulation is a violent process since it involves the breaking or rupturing of the epithelial capsule containing the ovum as well as the surface epithelium of the ovary. The egg thus freed from the ovary normally falls into the funnel of the oviduct or fallopian tube and is then conveyed down the tube, during which time it may be fertilized by a spermatozoon or male germ-cell. The spermatozoa are ejaculated into the vagina of the female during copulation which shortly precedes ovulation in those animals with a sharply adjusted oestrus expression. After fertilization the egg, now the new zygote or embryonic individual, passes from the tube into the uterus and becomes implanted on the uterine wall where it undergoes development to that stage fitting it for birth into the outside world.

Oestrus, or the periodic mating reaction in the female, is, of course, not limited to the mammalia but is as truly expressed in all other classes of the vertebrates—fishes, amphibia, reptiles and birds. The willingness to mate and ovulation are rhythmical functions varying widely in the time intervals of expression among the females of different species. Some mammals, among them the human female, have a short

period oestrous rhythm. Ovulation in these is repeated at frequent intervals of from a few days to a few weeks. This short cycle was termed by Heape a dioestrous cycle. There is no definite breeding season in such cases and conception may occur during any month of the year. Contrasted with this short dioestrous cycle of reproductive activity is the longer timed condition or monoestrous cycle in which the female ovulates and accepts the male only once per year, or, as in the dog, at intervals of about six months. As a rule oestrus in the monoestrous cycle is closely associated with the seasons of the year. Certain species breed or mate only during the spring season, others in summer and others during autumn. The young are therefore produced at quite definite season depending upon the length of the gestation period following the mating time.

Not all long cycle mammals are seasonal in their reactions. Although the bitch, for example, ovulates but twice a year and mates only at these times, there is little if any seasonal influence on the oestrous reaction. In reviewing the dates of more than five hundred accurately recorded matings among various breeds of dogs, these are found to spread through every month of the year. Consequently the whelping of puppies occurs at all seasons, approximately sixty days after the mating date. There are possibly two poorly expressed annual reproductive peaks for the dog, one in early winter, December-January, and the other in early summer, May-June.

The relation between oestrus and ovulation in mammals has for long been a subject of much investigation and speculation. Numerous questions have arisen. Does ovulation only occur during oestrus? Does it occur at this time whether copulation takes place or not, that is, is ovulation spontaneous or induced by copulation? If ovulation is timed against the period of acceptance of the male by the female does the egg leave the ovary before or after the

female accepts the male? When does ovulation occur in the human female and is this relative time always the same in one individual, and further, is it the same for all individuals?

These questions arise on account of the fact that ovulation in the mammal is an invisible or internal occurrence. In the cases of fishes, amphibians, reptiles and birds the egg, after leaving the ovary, passes very promptly through the oviducts to be deposited outside. In such cases the time relationship of oviposition to other reproductive phenomena is very readily observed. The intervals between the moments of copulation and the fertilization of the egg have not been difficult to determine in species that lay their eggs into the water or into nests.

The relation of the heat-period to ovulation in the mammal has been investigated for almost a century—since the discovery of the mammalian egg in the bitch by Carl Ernst Von Baer. In many mammals the heat-period or oestrus is associated with a pronounced and visible discharge of fluid from the female genitalia. This discharge or flow makes it evident that the female is either ready to mate or is approaching the mating season and sometime during this period ovulation is supposed to occur. In other mammals, such as most of the rodents which are commonly used for laboratory studies, there is very little or no visible external sign of oestrus. The time of ovulation in these mammals was until recently entirely problematical. In some of these animals it had long been known that the acceptance of the male by the female followed almost immediately after parturition or the birth of a litter of young.

On the basis of this fact studies were undertaken to determine the length of time between the ovulation following parturition and the subsequent ovulation in cases where no copulation was permitted after parturition. Leo Loeb made extensive studies of the reproductive cycle in the guinea pig from this standpoint and furnished valuable in-

formation regarding the changes in the reproductive tract and ovaries during oestrus and ovulation. In these studies, however, the state of the reproductive tract and ovary was only determined by removing the organs at operation or by killing the animal and then examining the organs, both grossly and microscopically.

Other such methods and calculations have been employed on various laboratory mammals in studying their reproductive processes but the unsatisfactory element in all these studies has been that they failed to follow the individual living female and furnished little means of predicting the exact moments of the several reactions constituting her oestrous cycles. A study of the living animal became necessary in order to determine a series of consecutive cycles in the same individual. An understanding of the oestrous rhythm in a given individual is highly important in order to analyze the effects of various experimental treatments on the physiologic state and her reproductive processes.

Particularly important and necessary are studies of the influences of various internal secretions on the oestrous processes. It had been realized that the phases of the oestrous cycle are most sensitive in their responses to changes in the internal conditions of the individual. From the standpoint of experimental embryology it was also often desirable to determine the moments of ovulation and fertilization in those mammals which are available for studies of early mammalian development and its modifications.

Due to these needs for a fuller knowledge of reproductive processes efforts were being made to discover an accurate means for determining the several stages in the oestrous cycle of the normal female mammal. Many investigators were engaged in these studies. It was finally found that daily examination of smears made from the fluid content of the mammalian vagina would give a most definite means of diagnosing the oes-

trous stages in the living female. The initial study presenting the method and correlated facts was made on the guinea pig by Stockard and Papanicolaou and published in 1917. Following this publication similar studies were made by numerous investigators, Long and Evans 1920, 1922 on the rat, Edgar Allen 1922 on the mouse and many others employing different mammals until it was clearly shown that examination of the fluid of the mammalian vaginal tract as described below makes it easily possible to diagnose the exact stage in the oestrous cycle as well as to know whether the cycle is in normal process, or modified, or entirely suppressed.

It is important at this point to realize that the guinea pig, which shows only slight and indefinite external signs of oestrus with no recognized prooestrous flow, has shown itself to be a far more favorable mammal for a complete analysis of the oestrous cycle than have those species with pronounced external indications of heat. Following the thorough analyses of the cycles in rodents a more complete understanding and diagnosis of the ovulation moment and the oestrous stages in primates and other mammals have been attained.

Our knowledge of the phenomena of oestrus and ovulation in mammals has greatly increased within the last twenty years. Today delicate modifications in the phases of these reactions are being used as graded indicators of the effectiveness of various substances, hormones and others, when introduced into the body fluids.

A general description of the changes in the fluid of the reproductive tract during the oestrous cycle may be given at this place in order to make clear a consideration of the variations in oestrus and ovulation phenomena during the life history of the individual. Since the cellular changes in the fluid of the vagina are so closely similar in a number of mammals we base the present description on the conditions as first recognized in the guinea pig.

VAGINAL FLUID

When the fluid content of the vagina is examined macroscopically in the living guinea pig it is found to change in amount and consistency at regular intervals. A definite sexual period, or oestrus, occurs, and lasts for about twenty-four hours. This period returns with striking regularity every fifteen to seventeen days. Throughout the twenty-four hour period fluid is abundant in the vagina and during the first half of the time is of a foamy, mucous consistency. The vaginal fluid then changes to become thick and rather cheesy and finally becomes slowly liquefied and serous. The final thin fluid disappears after a few hours. Rarely toward the end of the process a slight trace of blood may occur, giving a red appearance, but as a rule the fluid is milky-white or creamy color.

The changes in appearance of the vaginal content may be divided into four different stages: First, the stage of rather clear, frothy mucus lasting from six to twelve hours, or even longer, with gradual increase in quantity until it becomes very abundant and fills the entire lumen of the vagina. The female will accept the male and copulation occurs only during this first stage when the frothy fluid is present.

The second stage, during which the vaginal content presents a cheesy consistency, is shorter, lasting from two to four hours, and passes gradually over into the third, light serous fluid stage, which may last from five to ten hours. A fourth stage with occasional slight bleeding then follows. Other minor changes have been designated by some workers, but for general description these four chief stages are of greatest importance. The succession in which the stages follow one another is remarkably definite.

If the vagina be examined during the resting period, or dioestrus, only a scant amount of slimy fluid is present and this contains few cells as compared with the fluid from the four active stages of oestrus.

CELLULAR MOVEMENTS ACCOMPANYING
THE CHANGES IN NATURE OF THE
VAGINAL FLUID

The cellular compositions of smears prepared from the vaginal fluid at the several stages during oestrus show decidedly typical appearances. The relative proportions of the various cell types in the fluid at different stages are so definite that with little experience one may diagnose the exact sexual state of the animal concerned solely by an examination of the smear.

The mucous fluid of the first stage contains an abundant mass of cells which are of a squamous type and show considerable plasmolysis with bent and wrinkled cell membranes. The nuclei of these cells are very small and pyknotic, sometimes broken into pieces and then appearing as coarse black grains. The cell protoplasm has degenerated, having only a weak affinity for the plasma stains, and exhibits a reticular structure. Such cells derived from the wall of the vagina characterize this first stage by their predominance over other types.

There are also to be seen, particularly toward the end of the first stage, a certain number of elongate, cornified cells without nuclei, which are desquamated in larger masses from the more external portions of the vagina. These cells contrast in appearance with the earlier type cells, since in smears stained with hematoxylin and eosin they present a decidedly red color, while the early first type cells are almost gray. The red cells rather serve to indicate an intermediate period between the first and second stages of the flow, and may really be found during both stages but particularly at the end of the first or the beginning of the second stage. In addition to the two types, other kinds of cells may also be found in a first stage smear but these are never present in abundance nor are they so characteristic as the two above mentioned. Leucocytes are very scarce or strikingly absent from the first-stage smear. All of the cells float freely in the mucous fluid

without assuming any definite arrangement.

During the second stage the vaginal fluid becomes crowded with enormously increasing numbers of cells, thus bringing about the cheese-like consistence of the discharge. These cells are chiefly derived from the upper regions of the vagina with a few from the uterus and they exhibit to a high degree the healthy architecture of an epithelial cell in contrast to the plasmolized first-stage cells. The nuclei are fairly well preserved, showing only slight signs of degeneration. The protoplasm has not greatly deteriorated and gives a good staining reaction, thus differing from the gray-staining first cells. The second stage cells are present in great quantities while the mucous secretion diminishes more and more until it almost disappears. This stage is of short duration—only two to four hours.

In all mammals that have been studied, the Graafian follicle breaks and ovulation occurs as the second stage ends.

The third stage begins with the liquefaction of the cheesy mass. Cells of the second stage become less and less numerous, while myriads of polymorphonuclear leucocytes appear among them. This shower of leucocytes is a most striking occurrence following immediately after ovulation. As the shifting in cellular composition proceeds, finally each of the epithelial cells becomes isolated from others of its kind and lies in the midst of a number of leucocytes. The apparent effect of the leucocytes is to dissolve their way into the interior of the cell bodies. These appearances are never due, as might possibly be supposed, to the epithelial cells having devoured the leucocytes. The destructive influence of the leucocytes begins before the desquamated epithelial cells have fallen away from the wall of the uterus and vagina, yet it probably continues after the cells are free in the lumen of the vagina. The dissolving power of the leucocytes ap-

parently causes the liquefaction of the cheesy mass of epithelial cells.

As the third stage nears its end the material within the vagina is a thin fluid containing a great number of leucocytes as well as many epithelial cells of the second stage type, some of which carry leucocytes within their bodies. These leucocyte-containing cells are fairly typical of the third stage. As would be expected, the leucocytes within the cells very soon show signs of degeneration, never staining so clearly as those outside.

The fourth stage shows the same condition as the preceding but often at this time a slight hemorrhage may take place, although this does not always occur. The hemorrhagic fluid contains in addition to the great number of red blood corpuscles, a large number of leucocytes and also desquamated cells of the second stage, some of which are penetrated by leucocytes.

The presence of leucocytes is not alone confined to the end of the heat period but numbers of them occur in the lumen of the vagina during dioestrus. The only time when leucocytes are absent from the vaginal lumen is during the first and second stages of the oestrus, as described above. It is of interest that copulation occurs during the height of the first stage when the vagina is filled with the frothy mucous secretion and the leucocytes are entirely absent—both of these conditions contribute to the success of copulation and fertilization. Throughout the first week after heat the scant fluid which exists in the vagina contains chiefly leucocytes and a few atypical desquamated cells. During the second week the number of epithelial cells increases steadily, and among these atypical cells there may exist isolated cells of the first or of the second stage types.

At the fourteenth and fifteenth days after the beginning of the last oestrus, first stage cells gradually become more abundant and the growing predominance of these cells along with the disappearance of leucocytes indicates the

approach of the new period of heat.

The absence of leucocytes from the vaginal lumen at the time of copulation is important, since if present they might by their dissolving powers or phagocytic action exert an injurious effect on the spermatozoa and thus interfere with their normal function. Later a special purpose of the leucocyte seems to be to destroy the excess of spermatozoa remaining in the uterus. This frequently occurs by a process of phagocytosis. The leucocyte by stretching and contracting finally takes into itself the entire spermatozoon, the tail being wound in circular fashion within the cell body. The leucocytes, however, apparently accomplish most destruction by their dissolving or disintegrating effects.

The migration of the leucocytes through the walls of the uterus and vagina, though not increased in extent, is accelerated by the act of copulation and the entire oestrous process is shorter than in non-copulated females. About six hours after copulation the third stage is in full development, while under virgin conditions a comparable stage is reached only after at least twelve hours from the time when copulation might have occurred. It may be said that copulation tends to hasten ovulation, or that the act itself may facilitate the bursting of the Graafian follicles, which is a very old conception.

THE CYCLICAL CHANGES IN THE UTERUS AND VAGINA UNDERLYING THE CELL CHANGES IN THE VAGINAL SMEAR

During the dioestrus, or resting period, the uterus is lined by a layer of cuboidal ciliated epithelium. At this time the epithelial cells present a normal and vigorous aspect. No loss or breaking down is to be noticed. Mitoses are not frequent but they are to be seen occasionally. A few leucocytes are sometimes present among the cells of the stroma.

When the heat period begins, the uterine epithelium becomes tall and columnar and filled with mucus which is now secreted in abundant quantity.

The columnar cells appear closely pressed against one another and their nuclei are forced into different levels in the various cells giving the appearance of several rows of nuclei. The epithelium thus takes on a pseudostratified arrangement. At the same time, a large number of leucocytes begin to migrate from the capillaries through the stroma and towards the lining epithelium. The stroma itself is congested and possesses a more profuse circulation than usual.

These conditions of the uterus are to be found in animals killed during the first phase of the oestrous period, that is, when the vagina contains an abundant mucous fluid filled with desquamated epithelial cells.

When the second phase of the vaginal fluid appears the uterus presents another aspect. Leucocytes have accumulated in large numbers immediately beneath the epithelium, forming in this zone a perfect layer of leucocytes. The stroma shows a more advanced degree of congestion.

During the third stage greater and greater numbers of leucocytes penetrate into the epithelium, some of them making their way into the lumen of the uterus by passing between the epithelial cells. Other leucocytes actually enter the epithelial cells and lie in their interior. Large vacuoles are to be seen between the epithelial cells, probably produced by the action of the leucocytes. Below the disintegrating epithelium hematmata are formed by the congestion of the peripheral capillaries of the stroma. A leucocytosis somewhat similar to the above has been described by Heape, Königstein, Blair-Bell and others in the uteri of several mammals.

The broken-down epithelium remains until regeneration begins during stage four. The reparation apparently starts from the necks of the uterine glands which have remained intact during the process of destruction. A few leucocytes are present among the epithelial cells of the uterine glands, but this small number apparently passes through the

epithelium and into the duct without injuring the epithelial cells. The stage of reparation corresponds to the fourth stage, that is, to the period when blood is sometimes seen in the vaginal fluid. This is not difficult to explain, since regeneration and the falling-off of the degenerated epithelium take place at the same time. Regeneration of the uterine epithelium before the oestrous flow has ceased is known for other mammals.

The wall of the vagina undergoes destructive changes somewhat similar to those in the uterus except that the desquamation of the vaginal epithelium does not occur in cell clumps or groups at the end of the third stage. The epithelial cells of the vagina are shed singly but in increasing numbers from the beginning of the heat period up to the third stage. The cells which appear during the first stage come from the superficial layers of the stratified epithelium and near the outer part of the vagina, while during the second stage the desquamated squamous cells are derived from the deeper layers of the vaginal epithelium. This statement does not include the cornified cells from near the orifice, which are found between the first and second stages. The vaginal epithelium is also invaded by leucocytes. Leucocytic migration is decidedly vigorous during the third stage, about the same time that it occurs in the uterus.

The beginning of desquamation before the massive arrival of leucocytes would indicate that the primary cause of desquamation is not the presence of the leucocytes. But, on the contrary, it is probably the presence of the altered and dying cells during the epithelial dehiscence which induces the extensive migration of leucocytes to this surface. A congestion of the capillaries of the mucosa also takes place in the vagina, and slight hemorrhages may occur as in the uterus, when the destruction of the stratified epithelium chances to extend into the tunica propria.

During dioestrus, or rest period, the desquamation of epithelium from the vagina does not stop completely and the

scant vaginal fluid always contains some desquamated cells. At the same time, and probably connected with the shedding process, the exodus of leucocytes also continues, although in a very mild degree as compared with their migration during heat. The "intermenstrual fluid," therefore, always contains a few leucocytes and scattered epithelial cells.

THE OVARIAN CHANGES AND THE CELLS OF THE VAGINAL SMEAR

Ovaries fixed during exact stages of the oestrous cycle show that every change taking place in the uterus and vagina corresponds with a change in the ovary. At the beginning of the first stage the ovaries possess large, ripe follicles. The nuclei of the eggs contained in the follicles are in a resting condition. The theca folliculi shows the beginning of a slight congestion. As this congestion becomes more and more pronounced, the first stage of oestrus advances and by the beginning of the second stage the follicular congestion is highly developed.

The ripe follicles break at about the end of the second or the beginning of the third stage. The vaginal smear gives exact information on the time when ovulation occurs. It may be recalled that at this time the active leucocytosis begins in the uterus and the vagina. The ovaries are not omitted from this active migration of the leucocytes. A number of leucocytes are to be seen in the corpus luteum during its early development, but great numbers of leucocytes are to be found mainly in the atretic follicles, which are now becoming the seat of regressive and degenerative processes.

The ruptured follicles very quickly begin to undergo a reorganization and growth, resulting in the formation of the corpora lutea. Even during the third stage the corpus luteum is already a well-circumscribed body commencing its differentiation with the ingrowth of vascular tissue of the theca folliculi into the hypertrophied follicular epithelium. This condition is more advanced during the fourth stage, when reparation be-

gins in the uterus. The well-formed mature corpus luteum exists on the day following oestrus and the uterine epithelium soon returns to the typical resting condition.

THE NATURE OF THE OESTROUS PROCESS

Considering the above changes in the various parts of the female reproductive tract and the ovary, one is impressed by the striking similarity between these reactions and the ordinary inflammatory processes which follow acute irritation or infection. Few, if any, normal physiological changes in the mammalian body cause structural reactions so typically the same as those usually recognized under pathological conditions as does the process of ovulation. The oestral reactions emphasize the fact that inflammatory processes are, after all, really physiologic, that is, functional responses for protective and regenerative purposes. Inflammation begins with an unusual dilatation of the small blood vessels in a limited region, a partial stagnation of blood results, and an active migration of leucocytes from the vessels into the surrounding tissues occurs.

The effect of these conditions causes an accumulation of lymph and tissue juices in the region, and under the influence of the leucocytes pus is usually formed. The dilatation and congestion in the vessels around the enlarging Graafian follicle, and the same condition in the walls of the vagina and uterus during the first stage of oestrus, is a physiological inflammation, and the vigorous migration of leucocytes into the tissues of these organs is a further step to be followed by a breaking-down and sloughing-off of the surface epithelia.

The cause of these oestrous changes is the periodic presence in the blood of a chemical product or hormone either produced or else induced from other glands by certain of the ovarian cells. This hormone seems to exert a selective effect upon the reproductive tract, yet other organs secondarily associated with reproduction, such as the mammary glands and even the sympathetic nervous sys-

tem, are less acutely affected. The periodic arrival of this material in the ovary calls forth the acute inflammatory reaction rhythmically seen in the fertile female. The absence of the ovary or an interference with the occurrence of the hormone eliminates all of the oestrous reactions. Modifications or slight interference with the production of the ovarian material causes corresponding modifications in the uterine reactions and in the cellular composition of the vaginal smear. Thus the vaginal smear may serve as an indicator for natural or experimental modifications of the ovarian reaction; for example, during starvation and marked under-feeding the ovarian reaction is reduced and ovulation may be actually suppressed. The cellular composition of the vaginal smear then loses its normal periodic variations.

The influence of other glands of internal secretion upon the ovarian reaction as well as the effects of toxins and unusual chemical conditions within the body have been studied in recent years by the aid of the vaginal smear as an indicator of the ovarian state. This may be termed a cytological indicator and it is often as delicate and reliable in its response as one might expect a physical or chemical indicator to be.

HUMAN OVULATION

In order to locate the day of ovulation in the human female, oestrous changes have been widely studied for a very long time with the most varied and confusing results. By careful application of the vaginal smear method as discussed above, Papanicolaou has recently analyzed the human period with considerable clearness. There is individual variation, but ovulation in women generally occurs on the eleventh or twelfth day following the beginning of the menses.

As is well known, oestrus and ovulation occur only during the adult reproductive state of the female's life. In the young immature and not fully sized female the ovary is inactive and oestrus does not occur. The onset of ovarian

activity in the child is indicated by the growth and development of the secondary female sex characters, the mammary glands and the rounded feminine configuration. When these characters are fairly expressed the first oestrus appears. In a temperate climate this normally occurs in the white races at from the twelfth to the fifteenth year. The female at this age is considerably under the fully grown adult size. Many mammals in widely different orders—guinea pigs, dogs, cows and humans, to cite only a few—become sexually mature and may reproduce before they have acquired the fully adult size.

The processes of oestrus and ovulation continue in the white human female in a definitely rhythmical manner for about thirty-five years. Thus near the fiftieth year of life the reproductive capacity ceases and the so-called menopause begins. This cessation of ovarian function is not sudden, although it comes about rather rapidly within a few years. Papanicolaou has found that a somewhat indefinite rhythm may be detected in the vaginal smears of women for a number of years after menopause has been established. It is well known, of course, that menstrual periods frequently become very irregular and modified in expression during the few years preceding menopause.

In old mammals, for example in the guinea pig and dog, the oestrous cycles become lengthened and irregular although there is no clearly recognized menopause. Papanicolaou has recently found that very old guinea pigs continue to ovulate although they are sterile when bred to fertile males. A study of vaginal smears has shown that this sterility is due to a distortion of the intervals occupied by the several stages of the oestrous cycle. Stage one, which should last for about twelve hours, may be drawn out to three or four days and a copulation taking place during this stage may anticipate ovulation so far as to fail in fertilizing the eggs.

The second stage may also last for several days instead of for only a few

hours and so on until the cycle is drawn out into what one may describe as a slow chronic expression. Although the reproductive phase of the life cycle in lower mammals is not so sharply set off between puberty and menopause as in the human female yet there is a chronic fading out and discoordination of the reproductive process and in nature the individual is eliminated either before or during this time. Life after oestrus and ovulation have ceased, senility, is to be looked upon principally as a gift from domestication, and man, the most domestic animal, has received the longest share.

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C. R. S.

OLD AGE, SEXUAL ACTIVITY IN.

Of all the faculties and energies, sexual power develops last in the human body, but as a rule is the first to desert the ageing. Sexual impotence in old men may therefore be considered physiological. There are enormous individual differences, and not years alone but the condition of the individual must be considered as of first importance. Frequently we see comparatively young men exhibiting senility while even very old ones may be quite vigorous in every respect.

It is claimed that the sexual power begins to diminish around the fifties and is usually extinguished when the man reaches the age of sixty-five. The author, however, is of the opinion, that there is no distinct limitation of the reproductive powers in old age corresponding to the menopause of the female. Nor is it possible to determine in every case why such and such an individual has grown impotent in early life while another is still perfectly vigorous at an advanced age.

It is noticed that in some families a premature impotence and in others a tardy extinguishment of the sexual power is, so to speak, hereditary. The study of the influence of the activity, and the relative or complete suspension of the functions of some of the glands of internal secretion will enable us to explain many of the glaring individual differences in regard to sexual capacity in old men.

Too frequent excesses, especially masturbation in youth and over-careful husbanding of the sexual power are the greatest enemies to the preservation of virility. It is extinguished earliest in persons who never were very vigorous and who, on account of this feeble de-

sire, have acquired renown for virtuousness. It disappears latest in those who may now and then have given rein to their irresistible impulses, but without committing real excesses too often; who have, in a word, given off at all times only what they could easily spare.

Normally the extinguishing of the sexual power takes place gradually, the act can be performed less and less frequently, and while the erections may be quite vigorous at times, it requires more and more of an incitement to reach the final orgasm. Old men sometimes complain that desires and erections are satisfactory, but ejaculation of semen can be obtained only with great effort or not at all.

Chouryguine,¹ who dissected the sexual organs of twenty-one individuals fifty-five to eighty-eight years old, found various and considerable structural changes in the blood vessels, the nerves and their endings, the tunica albuginea, and the corpora cavernosa. These alterations alone could explain the ensuing sexual incapacity without any regard to the conditions of the sexual center in the brain and the spinal cord. The degenerative changes, however, did not always correspond with the age of the individual, and were sometimes found in relatively young men. The autopsies of old men by Dupley, Deiu, and others show that even octogenarians have well-developed spermatozoa, which does not prove that they are virile, but only that they may be so.

Quite often we see old men who have conserved all their bodily faculties but the sexual. The reverse hardly ever happens with the exceptions of cases where the sexual desires and even the possibility of the actual use reappears, even in decrepit persons after it was extinguished for a shorter or longer period. We must consider that paresis and fibroid degeneration of the prostatic gland may be the underlying cause of such a rekindling of the sexual power and may even explain the committing

¹ *Vratch*, December 18, 1897.

of various acts punishable by law in heretofore respectable old men.

As to those cases in which death occurred soon after some old gentleman had entered into married life or those cases of sudden death before, during, or after coition, nothing is proved by them since we hear constantly of persons dying slowly or suddenly without having thought of marriage or of sexual intercourse for a long time past. Again we also see men rejuvenated by the side of young wives and living to an advanced age. At any rate, those old men who are still in possession of a good remainder of their sexual power have a better prospect of a long life than those who in a decrepit state are condemned to a virtue which is not always volun-

The writer believes that satisfying real sexual wants is advantageous to old age, as it contributes to stimulate the energy in the assimilation of material; it buoys up and makes the heart rejoice; it helps to keep up cheerfulness, which is generally reduced in old people, and therefore may properly be considered as a means of favoring longevity. Malchow² calls it "the rejuvenating influence of conscious possession of an ability for the expression of love."

Modern authors are conforming to these ideas. Edward Martin,³ for instance, knew of one man who at the age of seventy-eight had begotten a child, and who stated that his erections were as vigorous as in youth, and that he performed the sexual act frequently and satisfactorily. This man's powers were possibly kept alive by his marriage with a young and vigorous woman.

Voronoff says: "The phenomena may be even better observed in debilitated old men who, in reality, are physiological castrates, devitalized by the exhaustion of years. When their sex glands cease to function, when they have lost the ardors of affection, a characteristic modification of their physical, moral and intellectual condition takes place, which their families and friends are quick to notice. Even those of an affectionate disposition become egotists, make everything turn around their own precious persons and are indifferent to

occurrence which previously would not have failed to move them. If Goethe, that universal genius, produced admirable works to the end of his days, if at the same time he evinced an astonishing degree of physical activity and energy, even during the last years of his life, it was because he was able to fall madly in love with a young girl of nineteen, at the age of seventy-four, and dying at eighty-three with the words—See that charming woman's head with black curls against a black background—bade adieu to the world."

The case of Goethe, is that of all men, who, reaching a very advanced age, continue to show themselves sturdily active, mentally clear, full of affectionate and generous feelings. Their sex glands still retain a sufficient number of active cells and nourish their love of life, in contrast to the old man whose glands have atrophied.

In the manifestation of his physical and intellectual qualities varying according to the individual, man himself is worth whatever his sex glands are worth. We must repeatedly emphasize that satisfying real sexual wants can be but advantageous to old age.

V. G. V.

OPHTHALMOLOGY, SEX FACTORS IN. The plan of treatment in this contribution is as follows: I. Sex and ocular anatomy and physiology in (a) the lower animals and in (b) man. II. Sex and eye diseases in (a) the lower animals and in (b) man.

I. Sex and Ocular Anatomy and Physiology

The Lower Animals. In most unicellular animals, for example Ameba, there are no eyes, and, in absolutely all, there is no sex. No relations, therefore, between eyes and sex in the Protozoa can exist.

In the colonial organisms, which are the first of the Metazöa, or many-celled animals, there comes into existence—birth. A one-celled organism, the Ameba for example, reproduces by fission—self-constriction of its entire body into two. That means that the same Ameba keeps on living indefinitely. The Ameba, biologically speaking at least, is immortal.

The Metazöa, however, are too complex to reproduce by fission. Certain individual cells, therefore, in, e.g., the Volvox, specialize in procreation. Each of these specialized pro-

² *The Sexual Life*, 1913, p. 299.

³ *Impotence and Sterility*. Hare's System of Practical Therapeutics, vol. III, p. 661.

creative *Volvox* cells undergoes a series of self-divisions until it forms a tiny sphere of cells which "migrates into the interior of the parent sphere [the parent sphere is hollow] and develops into a new colony. Within a short time the walls of the parent break, liberating the imprisoned young, which continue the existence of the species" (Jordan). That was and still is the most primitive birth the world has ever known—the first case of a new animal coming out of the interior of a parent.

Hand in hand with birth came death. Soon after the exit of its young the parent *Volvox*, contrary to the case with the fissioned *Ameba*, dies—dies because the various cells of its community organism eventually poison one another to such an extent that each and every one of them ages, especially in the course of the reproductive process, even until it ceases to live. Death is the price life pays to get a higher existence both for itself and for its offspring. Not sin brought death into the world, but the attainment of excellence.

The method of *Volvox* reproduction just described is only one of two which it possesses. In the second procedure there occurs for the first time among animals a differentiation and separation of the sexes, male and female. The male cell and the female are thrown off by the parent into the water. These, uniting, form new *Volvoes* outside the parent's body—for which reason there is by this method no such thing as birth. Much higher still in the animal scale both of these *Volvocean* methods

for example, new beings develop (from one sex) in water (amniotic fluid), though inside the mother's body, and, later, undergo birth in addition.

In the *Volvox*, however, and all the colonial (early *Metazöan*) animals, although there is indeed sex there is nothing in the way of eyes except the tiny red eye-spots (*stigmata*), which are primitive indeed and which merely serve to show the existence and the direction of the source of light (and of heat). Yet sex did, conceivably, flourish and develop into higher and higher forms largely beneath the guidance of the tiny eye-spots.

The Arthropod Series.—When, following the steep road of animal development, we reach the *Coelenterata* (hollow-intestined animals) we find that the great animal highway undergoes a critical bifurcation. The left fork of this road is called "The Arthropod Series," because its highest destination, to date, is the *Arthropods*—with *Insects* at the top. None of the animals in this series are man's ancestors. The right

fork is termed "The Chordate, or Vertebrate, Series," because its final destination is the *Vertebrates*—with, at the top, *Man*.

Inasmuch as time and space limitations forbid any very detailed consideration of many phyla in either of these series, be it said quite comprehensively and once for all that, in many if not most of the phyla, eyes and sex have acted and reacted upon each other interminably. Also let us say that, almost without exception, in each and every phylum, the male has been the dynamic, or active, partner, both in courtship and in copulation, and the female the static, or receptive. This fact has had a strongly formative effect on eyes.

In one great class, the *Insecta*, or *Insects*, the group which stands at the top of the *Arthropod Series*, sex and eyes have developed such interrelations and interactions that startling sexual dimorphism in eyes has become an outstanding feature of many of the species in that group.

Take, for example, the common honey-bee. In that species the two compound eyes are almost twice as large in the

(The three median ocelli, or simple eyes, are alike in both sexes.) Moreover, each compound eye of the male presents 500 more eye-units (*ommatidia*) than do those of the queen, the respective numbers being 5500:5000. Finally, the 5500 *ommatidia* of each male's eye are set in close approximation, so that a fairly good mosaic picture must be the result in the male brain, whereas the various eye-units of the queen bee are not in contact one with another and the result therefore must be a defective, unintegrated image. There is, of course, on the nuptial flight, an enormous competition among the large number of males—several hundred to each hive—to overtake the queen, and the best-winged, best-eyed suitor wins.

Among the *Coleoptera* (sheath-winged insects) the "fire-fly" (not a fly at all, but a beetle, or sheath-winged insect) is a striking example of the shap-

ing effect which sex and sexual practices oftentimes exercise on eyes. In the small European fire-fly, *Phausis splendidula*, the female, which is wingless, has, in each eye, 300 facets, or eye-units, while the male, which is vigorous, assertive and strongly winged, has 2500. In the large European fire-fly, *Lampyris noctiluca*, the numbers are 700:2600. The female fire-fly, of whatsoever species (popularly known as the "glow-worm," though it is of course no worm, but a beetle) has on two of its abdominal segments "light-organs" for the guidance of the male to his copulative goal. All day long the female lies in the grass, belly downward, but, at night, when the copulative instinct comes upon her, she turns her abdomen toward the sky, and then the transverse bands of her sixth and seventh segments throw up their clear greenish radiance to the faintly shining male.

In the American "May-fly," or "lightning-bug," both sexes are quite luminous, but the light is whitish and intermittent in the flying male, steadier and stronger and greenish-blue in color in the stationary mate. In the American species, as in the European, the compound eyes of the seeker, or male, are always the better developed anatomically and far more active functionally.

Perhaps the most striking example of ocular sexual dimorphism in all the animal kingdom is that of another insect, the "red orange-scale" of Florida and California. The adult female of this species is a mere wingless, legless and eyeless sac. Not even a trace has she of eyes. Devoid of motion beneath a round red scale of her own making she devotes her entire time to gestation and to imbibing, through her long, highly developed bill, the nutritious juices from fruit, or leaf, or stem—according to the site she has chosen. In fact she is nothing but suck-apparatus and sex-apparatus. The male, on the other hand, is in appearance so decided a contrast to his partner that few would take him to be a member of the same species. Strongly winged and strongly legged

and possessing not one but two pairs of eyes, he flies about aggressively, not merely for the purpose of finding sustenance, but, at the proper season, of glimpsing his extremely sedentary and almost incredibly passive partner and performing upon her the copulative act.

Her eggs she deposits beneath her body without moving. Then, like the "puerperal" Volvox, she dies.

The eggs hatched, the larvae, male and female alike, have each two eyes—although no wings. Crawling over the tree until they discover a desirable spot, they, so to speak, "stake out a location and bore a well" by means of their powerful beaks. When they moult, the female loses her legs, wings, feelers and eyes, and becomes a fixture on the original spot, while the male, taking largely to the air, not only retains all that larval equipment, but acquires in addition a second pair of wings and, actually, a second pair of eyes.

The Chordate Series.—Turning to the second, or right hand, branch of the road as shown in "The Animal Highway," we at first pass over the less important stations—Nemathelminthes, Sagitta, Echinodermata, Hemichordata (Acorn-tongue worms), Urochordata (Sea squirts)—some of which are parasitic and have no eyes, others of which have eyes that are little else than pigment-splotches, while yet another has just one eye and in the larvae only, and then come to the great common ancestor of the Vertebrata—the Amphioxus. This tiny animal is, so far as known, the first in the animal kingdom to develop a notochord, the soft precursor of the rigid spinal column, and a structure which, even to-day and in man, appears in the fetus, later becoming included in the bony column of vertebræ as the pulpy portions of the intervertebral discs. In the spinal marrow of this transparent animal there lie numerous goblet-eyes which appear to be the forerunners of all the paired (not the median, or pineal) eyes of all vertebrates—eyes which, though of protean character in the various classes of ver-

tebrates, nevertheless present various distinguishing marks, and, as a whole, are far and away the finest of all eyes upon the planet.

Decided sexual ocular dimorphism is, among vertebrates, either extremely rare or non-existent. Certain differences in the eyes of the two sexes do, however, appear among Vertebrates. Speaking of Mammals, the class which mostly interests us, females ordinarily have smaller eyes than males, but often their eyes are larger in proportion to the size of their bodies. Not infrequently, too, the eyes of the females stand more widely open and are more softly hued.

The Eye as Erotic Distance-Organ.—"The erotic distance-organ of the first magnitude is the eye," says Wilhelm Bölsche. That is true, even among the lower mammals, in which not infrequently the nose runs the eye a close race. Thus, Crocodiles of both sexes have musk-glands, which send to incredible distances their calls of love. Castor, a preputial secretion of the beaver, is a far-reaching lure to the female of the species. Certain kinds of deer have a "rut-gland" just beneath the eye, which answers quite as well: it used to be regarded as a portion of the organ of vision and as having to do with the lacrymal apparatus. Then again, the hair of various parts of many animals' bodies exercises an urgent kind of sex-lure. Then further, the love cries of many animals make their entire appeal to the distance organs of audition.

But, after all, the statement of Bölsche is correct, and, largely by means of sex-appeal to eyes, it is that—at least according to Darwin—"sexual selection" has operated to produce, for example, the present-day immense variety of bird-species and the beauty of some of their plumages. Birds pair and, in a good many species, are true to each other for a season at least. The pairing is preceded by a "courtship," wherein the males not only "put on a show" of their vocalistic powers, but, in addition, and far more energetically, display the brightness and beauty of their feathers.

The more vocal and highly decorated males win the desirable mates and, by natural consequence, get to reproduce their own captivating characteristics. The most typical results of "sexual selection" by means of vision appear in such birds as the pea-fowl, the lyre-bird, and the bird of paradise. Wallace ascribed the thin, dull colors of most female birds to the fact that a glorious plumage was "disadvantageous during incubation."

Many other animals, too, in the Vertebrate Series, display a glorious sex-appeal to the eye. The butterfly fish, for example, which inhabits the rivers near the west coast of Africa, undergoes as an immediate preliminary to sexual intercourse, the most marvelous succession of color changes in both the male and the female: red, blue, violet, golden and even deep, glossy black. Innumerable deep sea fishes have sexual light-organs, and, in a great many up-water species, the males become quite brilliant at the breeding time. Male newts and lizards, too, assume a brilliant nuptial coloration.

Among mammals there are certain monkeys which stand out most conspicuous in the matter of sexual eye-appeal. The mandrill, for example, has face, buttocks and sexual areas quite naked, the nose tinted the brightest of possible reds, the cheeks deep cobalt blue while the sexual parts and anus are red and the nates a joyful combination both of cobalt and of crimson. The so-called love-dances, love combats, and love-games of various kinds of animals, are also manifestly appeals to the eye. On the whole, it is not the slightest wonder that the eye has been termed "the organ of distance love."

Man. We have already seen that, among mammals, females ordinarily have smaller eyes than males but that, as a rule, their eyes, in proportion to the rest of the body, are the larger. This rule holds true in Man. The average of each dimension in women's eyes is, in fact, 0.5 mm. less than in men's. The appearance of a greater ab-

solute size in women is due in part to the smaller dimensions of the female face and head, still more to the greater length and width of the palpebral opening, and even more still, to the greater prominence of the eyes—due to the larger quantity of fat behind them.

In women's eyes there is generally a brighter and softer sheen to the cornea, a finer and more harmonious distribution of pigment in the iris, and a silkier gloss as well as a whiter color in the exposed portions of the sclera. There is also, in women's eyes, a much less irregular scattering of pigment in the sclera, much less frequency of pinguecula and pterygium, and decidedly fewer and smaller bloodvessels in the areolar tissue between the sclera and the conjunctiva. There is further in women a freer and quicker motion of the globes—a condition productive of the effect of greater animation. Finally, women have larger tear glands,¹ tear sacs and lacrymal ducts.

Quite as in the case of many lower animals, the organs of distance love are three in number: hearing, smell and sight. How many a man has been attracted powerfully to some woman by the sound of her peculiarly feminine voice! Then too, as in many of the lower animals, the odor of human hair is, at certain seasons, a powerful lure to many. True it is that the special beauty of the human figure lies in its nakedness—its freedom from animal hair. Nevertheless, the crinose islands still remaining on the human form—the pubes, the arm-pits, the head, the beard-parts and the brows above the eyes—still are powerful broadcasters even to the degenerate noses of mankind.

Most importantly, however, in the sexual sense of course, the hair on the brows appeals to the other sex's eyes.²

¹ Facts which, as my friend, Professor Ludwig Plate, writes me, "jeder Ehemann aus praktischer Erfahrung bestätigen kann."

² Eyebrows appear almost exclusively in mankind. So too, as a sex-inherited characteristic, the mustaches. Hairs that appear on the same locations in cats, swine and certain other animals, are "sinus hairs," organs of

They are indeed a kind of *overlining* of the eyes, inasmuch as they serve to enlarge and emphasize the meaning of that organ—much in the way that *underlining* serves to enlarge and re-inforce the significance of a written or printed word. When eyebrows have been shaved off, how small and insignificant appear the eyes!

But eyes that are correctly overlined and right in other ways esthetically, how beautiful indeed they are! Then, too, how often they become, by means of changes in their expression, confessors or at all events excitants of love in both the lower and the higher meaning of that term! Eyes may kiss before lips dare to do so.

Indeed almost all the so-called secondary sexual characteristics make their appeal to the eye. For this reason it largely is that both men and women dress up, walk straight, smile sweetly, use cosmetics. For this reason too it is that both men and women, largely by unconscious sexual selection, have "undressed" each other—produced, generation after generation, greater and greater emergence from the pristine fur. And now that clothes (largely invented to keep the primary sex organs from interfering with the ordinary course of civilized life) have mostly supplanted the hairy coverings of animals, men and women continue, spite of their utmost wishes to the contrary and spite of the prohibitions of religion, to "undress" each other again—this time with the eyes of the imagination—so as to bring before the inner vision both the

touch. The very first hairs to appear on the human embryo are in truth these tactile hairs of the lower animals. Later there arrives the complete suit of lower-animal fur. Then the human hair—almost exclusively on head and eyebrows. At the end of the seventh intra-uterine month, the animal hair begins to fall off, leaving only the human kind, pattern and placement. At the age of puberty there appear for the first time the hair of pubes and axillae, and, in the male, the beard. At about the same time, the delicate eyebrows of childhood are replaced by a firmer, thicker and darker set of hairs, almost always however more delicate in women than in men.

primary and the secondary characteristics of sex.

The Eyes in Copulation.—During the preliminary approaches to intercourse the eye-fissure (opening between the lids) is generally somewhat narrowed, the cornea made more moist and lit with a soft, steady illumination. In the stage of aroused passion the fissure narrows yet more, or, in some cases, enlarges, the gaze tends to become fixed, the pupils moderately to dilate. During the orgasm the eyebrows are either lifted or drawn downward and inward in a kind of frown, the eyeballs protrude as if with exophthalmic goiter, the palpebral fissure enlarges *ad maximum*, the irides darken, and the pupils either slowly dilate to the extreme or undergo a rapid and rhythmic, if somewhat irregular, hippus. The ocular accompaniment of the orgasm, like the orgasm itself, is inclined to be more protracted in women than in men.

II. Sex and Eye Diseases

The Lower Animals. Our knowledge of diseases of the eye in the lower animals is, like lower-animal pathology in general, almost entirely a blank. Here is, in fact, a great opportunity for the younger generation of biologists, physicians and veterinarians. Aside from the fact that one-cell animals, *Ameba* for example, suffer little from disease because of their ability to enwrap and digest bacteria, and from a very few facts of veterinary medicine (such as that nearly all the domestic and industrial animals suffer from conjunctivitis, pterygium, cataract and many other eye diseases in about the same way as do men) almost all this region of lower-animal pathology is one vast *terra incognita*.

It should, however, be added that two great diseases—gonorrhea and syphilis—which, in the great majority of instances, are sexual in origin, and which produce a very large number of eye complications in mankind, have little or no chance to do so among the lower species.

Man. THE FEMININE SEX-CYCLE.—The complete sex-cycle in women consists of (a) puberty (b) menstruation (c) pregnancy (d) parturition (e) the puerperium (f) lactation (g) the climacteric, or menopause.

Puberty.—The onset of puberty in girls, which occurs as a rule at 12 to 14 years, is a far more momentous event

than in boys, partly because general growth in the female almost invariably ceases at puberty, whereas it continues in boys for several post-pubertal years, and, further, because the immense development in the female procreative apparatus engendered in girls by puberty calls into activity the functions of all the other endocrinal glands to a far greater extent than does puberty in boys.³ As a necessary consequence, puberty is capable of creating in girls more and farther-reaching effects on the system in general and on eyes in particular.

If puberty be too long delayed, the effects, of course, are intensified. Among the more important consequences are all the well-known symptoms known as ocular hysteria, including photophobia, relaxation of the accommodation, blepharospasm and contraction of the fields of vision for color and form. Now and then at puberty a very transient crossing of the eyes has been observed which is not assignable to other causes than the general disturbance of the nervous system.

Menstruation.—Among the ocular diseases directly attributable to menstruation are coloration and edema of the lids, conjunctivitis, herpes corneae, temporary blepharospasm, rapid fatigue of the ocular muscles, muscular imbalances even to the point of ephemeral strabismus, contraction of the form and color fields, and amaurosis.

Well established is the fact of vicarious menstruation *via* the eyes, even when these are to all appearance normal. The current explanation is that, in the ocular tissues affected, there is present an abnormal sensitivity. In some cases there is only, at or about

³ Thus, the *developing follicle* stimulates the uterine endometrium; the *Graafian follicle* acts upon the pituitary to affect its pitressin and pitocin production, also its pancreatropic, ketogenic, thyreotropic and parathyreotropic, adrenal and lactogenic functions; the *ovulating follicle* stimulates the submucosa; the *corpus luteum* transmits progesterin and theelin to the endometrium and the *degenerating corpus* withdraws both theelin and progesterin from the endometrium.

menstruation time, a great hyperemia of the lids and conjunctivae. The actual hemorrhages may occur on the surface of the conjunctiva, into the anterior or posterior chamber, in the vitreous or retina. Blindness, of course, sometimes results from blood in the last two structures.

Parsons (*Pathology of the Eye*, page 1303) is authority for the statement that "an attack of glaucoma may be indirectly induced by normal menstruation," and oculists generally have observed that almost any ocular disease is apt to be exacerbated by menstruation.

Pregnancy.—The human eye is often injured, sometimes very seriously, by gestation. From the front to the back of the eye, the commoner involvements are as follows: there are often pigment splotches in the eyelid skin quite as in other portions of the body. Now and then there are oversecretion of tears and epiphora. This condition, though annoying, subsides as a rule with the progress of the pregnancy. *Hyphema conjunctivae* is a common symptom but of no particular importance except from a cosmetic viewpoint. Phlyctenular ulcers of conjunctiva and cornea are said to be more frequent in gestation. Failure of both the extrinsic and the intrinsic muscles occurs, the latter the more often and more persistently.

Any previously existing muscular imbalance is almost certain to be aggravated. Myosis and mydriasis are both common, and, sometimes, the former condition exists in the one eye the latter in the other. Iritis and irido-cyclitis are both often present, and should be ascribed to some of the numerous infections, toxemias or endocrine disturbances so commonly encountered in the course of gestation. Vitreous hemorrhages may occur, with, however, almost always, unusually good prognosis. Polyopia (multiple vision with one and the same eye) is common in the early months.

The most frequent complication of pregnancy, however, so far as concerns the eyes, is bitemporal contraction of

the visual fields with enlargement of the normal blind spots. The blind-spot enlargement occurs in a slight majority of the cases and the bitemporal contractions in eighty to ninety per cent. Both these conditions were once regarded as due to vascular swelling or even actual, although transient, hypertrophy of the pituitary gland. Later and more careful investigation has swung the consensus of opinion to the view that they result from toxic additions to the blood, without involvement of the pituitary. A few writers even regard them as perfectly normal phenomena, no more pathological than, for example, the fetal heartbeats.

Not nearly so common as changes in the visual field are lesions of the optic nerve and retina. These, the real ophthalmic tragedies of pregnancy, constitute an urgent indication for abortion. Some writers believe that even recurrent spasm of the retinal arteries, if accompanied by general systolic hypertension, calls for an immediate abortion. If there be in addition pernicious vomiting, the opinion favoring immediate abortion is practically unanimous. Without the abortion there will certainly result permanent injury to the vascular system, probably total blindness, and, possibly, death both of mother and of child.

Parturition.—Chief of the ocular accidents which occur during childbirth are hemorrhages beneath the conjunctiva or into the vitreous, detachment of the retina—due to muscular strain—and optic atrophy, caused as a rule by excessive loss of blood. In premature labor the loss of blood is apt to be much greater than in normal parturition. When the atrophy is due to hemorrhage, the causative mechanism, symptomatology and prognosis are nowise different from the cases resulting from gastric or duodenal ulcer, severe wounds, excessive venesection, etc. Always there must be present a predisposing factor. One eye or both may be affected, and the visual loss may be temporary or permanent.

The Puerperium.—As a rule, as soon

as labor is completed most of the ocular troubles arising out of pregnancy and parturition begin to disappear. The hypersecretion of tears is ordinarily the first symptom to go. The pigmentation of the lids clears up rapidly but not always *in toto*. The retinitis and optic neuritis may recover completely, or with some remaining damage or not at all. Inasmuch as the puerperium continues so long as involution is in progress, it follows that hemorrhage more or less severe can occur to the end of the puerperal stage. Strangely enough, far more cases of blindness from hemorrhage occur post-partum (puerperally) than during childbirth. The bitemporal hemianopsia of pregnancy almost always disappears before the puerperium is over.

Lactation.—The mother first supplies her baby with nourishment by means of colostrum, then of milk. The colostrum is secreted under the influence of a hormone which the foetus itself liberates. If the mother continues to nurse her baby, menstruation does not return until the ninth month after labor. During these nine months any incomplete ocular damage produced by pregnancy, labor or the puerperium, may be increased by the drain upon the mother's system which the lactational function imposes. It may, therefore, although rarely, be desirable or necessary to put an end to the mother's nursing of her child.

The Climacteric.—The menopause—physiological permanent cessation of the menses—occurs when the activities of the ovaries finally cease and the child-bearing period is ended—in other words at the age of forty-five to fifty years. As a rule the systemic disturbances attending the climacteric are of little significance—hot flashes, headaches, giddiness. The ocular symptoms, however, though often hysterical only, are not infrequently severe. Very dangerous cases of conjunctivitis and episcleritis, complicated with corneal ulcers of various types, iritis, cyclitis and intraocular hemorrhage, all of climacteric

etiology, are undoubtedly seen. Far less common are optic neuritis and primary optic atrophy. Most unfortunate, however, of all the ophthalmic complications of the menopause is glaucoma.

The artificial menopause, such as results from ovariectomy or sterilization by the x-ray, can produce any or all the ocular results engendered by the normal climacteric: it in fact is far more likely to produce them, inasmuch as, being sudden in its nature and wholly unprepared for by any natural processes and adjustments, it throws upon the entire system a much greater strain. Even an insufficient secretion by the ovaries prior to the climacteric, natural or induced, may, by upsetting the endocrinal balance, produce any or all the eye disturbances above set down as produceable by the climacteric itself.

THE FEMALE PELVIC ORGANS, AS FOCI OF OCULAR PYOGENIC INFECTION.—As in all focal affections, the transmitting agent is the bloodstream, which carries to the eye from the primarily infected areas either single bacteria or minute thrombi containing smaller or larger numbers. Often they are carried by phagocytes. The outbreak of the metastatic inflammation is ordinarily unaccompanied by systemic reaction. Disease may also be engendered in the eyes by conveyance from the female pelvic organs of toxins, and also, without the conveyance of any material agent from the pelvis to the eyes, through reflex activity of the nervous system. Then again, morbid conditions in the pelvis may, by means of hormones, excite in the other endocrine organs of the body an increase, a diminution, or an unhealthful alteration in their secretions.

The commoner diseases produced in eyes by any of these methods are scleritis, iritis, uveitis, keratitis, choroiditis, retinitis and optic neuritis. These affections thus produced are generally not suppurative, and a very peculiar fact about many of them is that they are intermittent, coming on and disappearing with the onset and the cessation of each menstrual period. The explana-

tion is that, as the uterus congests prior to and at the time of menstruation, its capillary vessels (now distended with blood and therefore thinner-walled than usual) permit of an easier passage of bacteria from infection-nest to bloodstream.

THE MASCULINE SEX-CYCLE.—The complete sex-cycle in boys and men consists of (a) puberty (b) the climacteric (if any).

Puberty.—As already stated, the onset of puberty in boys is not nearly so momentous an event as in girls. Nor are its effects on eyes so many or so disturbing. Among the pubertal symptoms, however, not infrequently noted in boys, the commonest is *muscae volitantes*, or "spots before the eyes." Whenever the patient looks suddenly upward, especially if he be facing a bright wall, a cloud of these disturbing specks, or "insect wings," are projected into the upper portion of his visual field, and if, then, he holds his eyes fixed on a given spot of the wall, the specks are observed by the patient to drift slowly, distressingly, downward until out of sight beyond the lower border of the field. The "hysterical" symptoms, however, so completely upsetting to girls, are seldom noted in boys.

The Climacteric.—The climacterium in the male is placed by some authors at the age of 50; by others at 60; others still at 63; and by a very few at 70 or 75. Some of the signs alleged to be climacteric in the male are: hydrocele, enlargement and shrinkage of the prostate, impotence, sterility, overactivity of the thyroid with or without mental impairment, hyperglycemia (the commonest symptom of all), excessive leanness, adiposity especially abdominal, inguinal hernia, chronic bronchial cough, arcus senilis, senile atrophy of the optic nerve and retina, various forms of cataract.

The truth is that, although elderly men do tend to develop the above-mentioned diseases or symptoms, there is no such thing as a climacteric in the male. Indeed it is a well established fact that a great many men who have become quite old are still both potent and fertile. The male does not enter the climacteric and grows old in very much the same way that the female does after experiencing a very real climacteric.

In fact Kenneth M. Walker expresses the matter even more emphatically still: "No such condition as a male climacteric is recognized by orthodox medicine. . . . I could quote many instances of spermatogenesis in the testes of men of 80 and even of 90" (*Accidents of the Male Climacteric*, British Medical Journal, Jan. 2, 1932, pp. 50-53).

THE MALE GENERATIVE ORGANS AS FOCI OF OCULAR PYOGENIC INFECTION.—As in the case of the female pelvic organs the generative organs of the male not infrequently serve as distributing centers for pyogenic infection. The chief organs so serving are the seminal vesicles and the prostate. As in the case of the female organs, the transmitting agent is ordinarily the bloodstream, which may carry to the eye either single bacteria or minute thrombi containing smaller or larger numbers. Sometimes the bacteria are transported by phagocytes. Sometimes, instead of by metastatic infection, the eye complication is produced by blood-borne toxins, or through reflex activity of the nervous system or by hormonal action. The commoner diseases so produced are scleritis, keratitis, iritis and inflammations of any or all of the other ocular structures.

EXCESSIVE VENERY IN BOTH MALES AND FEMALES.—Unrestrained self-abuse or sexual intercourse is no longer regarded as a primary cause of serious eye-disease. Nevertheless, excessive sexual excitement can produce troublesome *muscae volitantes* (spots before the eyes), photophobia, inequality of the pupils, relaxation of the accommodation, weakness and even imbalance of the extrinsic ocular muscles. The graver eye affections, such as iritis and choroiditis, are seldom if ever produced by excessive venery and masturbation. The *American Encyclopedia of Ophthalmology* (xv, p. 11733) says, "It must be remembered that retinal hemorrhage and even optic atrophy have resulted from excessive venery." My opinion is that whenever such diseases follow such causes, there has always been present in the first which is much the more important of the two.

SEX DISEASES AS RELATED TO EYE DISEASES IN BOTH MALES AND FEMALES.—Specially to be regarded as sex diseases are (a) chancroid (b) syphilis (c) gonorrhea.

Chancroid.—This affection, oftentimes termed soft chancre, appears extragenitally in ten per cent of the cases. Sometimes it is found on the eyelids, where it resembles vaccinia and often leaves a scar.

Syphilis.—This, one of the three great scourges of the human race, is a prolific begetter of eye symptoms, impaired vision and blindness. Three stages are generally attributed to syphilis. The first is that of the initial sore, or chancre; the second, that of febrile disturbances, bone pains, headache, protean skin rash, mucous patches in the mouth, sore throat, anemia; the third, that of rupia and other deep lesions of the skin, endarteritis, serious involvement of any or all the internal organs. Some make a "fourth stage," others a "parasyphilitic state," of the terminal conditions known as "tabes" and "general paresis of the insane." Each and every one of these stages may, and not infrequently does, present some serious eye involvement.

Primary syphilis of the eye is not uncommon. In fact, from six to ten per cent of all chancres are extragenital, and, of these, a goodly number appear (named in the order of frequency) on the conjunctiva of the lower lid, its cul-de-sac, its free margin, internal canthus, the conjunctiva of the upper lid, its cul-de-sac, the bulbar conjunctiva, and, lastly if strangely, the cutaneous surfaces of the lids. Chancres of the eye are produced as a rule by kissing, or fondling, and physicians have been infected by coughed out saliva while treating the throats of syphilitics.

Secondary syphilis oftentimes produces the characteristic rash on the skin of the lids, also falling of the eyebrows and eyelashes. Mucous patches may appear on the conjunctiva. The most damaging eye-complication of this stage is iritis, serous or plastic.

The third stage, however, is the great spoliator and ravager of eyes. Not a structure or a bit of tissue within the entire apparatus of vision but may be ruined forever by tertiary syphilis. The more important complications in this stage are as follows: dacryocystitis and stricture of the lacrimal duct; gummatous infiltration of the lacrimal gland; interstitial or parenchymatous keratitis; iritis, cyclitis, and choroiditis; hyalitis, retinitis, papillitis, optic neuritis; orbital abscess; paresis or paralysis of any or all the eye muscles; gumma of the optic chiasm, the optic tracts, right or left, the corpora quadrigemina, the optic radiations, and even the primary or secondary sight-centers.

In general paresis of the insane (paralytic dementia) inequality of the pupils occurs in

half the cases at a very early stage. It, therefore, presents much diagnostic value. In a third of all the cases another early sign is the Argyll Robertson pupil—the kind reacting not to light but to convergence. The absence of sensory reflexes from the pupils is also an early symptom of some importance. Ptosis and optic nerve atrophy appear quite late and only in a tenth of the cases.

In *tabes dorsalis* (locomotor ataxia), which occurs most frequently in males, the earliest of all the symptoms are, as a rule, those relating to the eyes—whence, among many other reasons, arises the great significance of those symptoms. The earliest sign of all is apt to be epiphora. The next, a contraction of the pupil (spinal myosis) to almost a pin-point size. The pupils, however, may be normal, or even dilated, to the very end of the disease—and of the patient. Whether small, large, or normal, the pupils often display the Argyll Robertson sign.⁴

Transient or enduring paresis of one or more of the ocular muscles occurs, sometimes early, sometimes late. There is apt to be narrowing of the palpebral fissure and ptosis, either false or true. Intention nystagmus is sometimes marked. Optic nerve atrophy, present in 30 per cent of the cases, begins early more often than late. This first displays itself subjectively as a contraction of the visual fields, central vision often disappearing only very late in the course of the general affection. *Tabes* ordinarily occurs in cases wherein the original disease has never been treated.

Hereditary syphilis of the eye is even more dangerous to sight than the acquired variety. Half of all syphilitic fetuses are born dead and 80 per cent of the remaining half have serious eye affections, most of these beginning not till some months after birth.

Gonorrhea.—This disease as a rule begins and ends as a purely local affair. Sometimes, however, especially in males, it becomes systemic, and then may attack various parts of the eyes. It may also be transferred from the sex organs to the eyes mechanically—i.e., by means of fingers or towels which have been contaminated with the gonorrheal discharge. When transported to the eyes mechanically it manifests itself as "gonorrheal ophthalmia" (purulent conjunctivitis). When it is carried by the bloodstream, it is known as "metastatic gonorrheal ophthalmia." After either kind of transferal the vision is very likely to be damaged or destroyed. The "gonorrheal

⁴ Whereby locomotor ataxia may often be distinguished from disseminated sclerosis, in which there is also early myosis but seldom an Argyll Robertson pupil at any stage. (The scanning speech, too, occurs only in disseminated sclerosis.) The optic atrophy, furthermore, in disseminated sclerosis, as a rule comes late.

ophthalmia" begins as a very severe conjunctivitis and keratitis. Often the cornea ulcerates, the ulcer perforates, the ocular contents are extruded and the eye is lost.

A similar disease is "ophthalmia neonatorum," which is almost always gonorrhea in the eyes of the newborn—the infecting agent in these cases having got into the eyes while the child was passing through an infected birth-canal. This is one of the most terrible of all ocular affections. According to Dr. Charles P. Small, "from one-third to one-half of the total amount" of the world's blindness is due to the ravages of ophthalmia neonatorum. Since the immortal discovery by Cr  d   that the instillation of a weak aqueous solution of nitrate of silver into the eyes of the newborn will almost invariably prevent the development of the disease in question, the scourge of infantile blindness has been greatly mitigated.

In metastatic gonorrheal ophthalmia the disease is not so likely to manifest itself in the superficial eye structures. Ordinarily the very first ocular complication is gonorrheal iritis or irido-cyclitis. The sclera, cornea and conjunctiva are, however, occasionally affected. Rarely there is retinitis and optic neuritis. The metastatic disease is far more amenable to treatment than either gonorrheal ophthalmia or ophthalmia neonatorum.

T. H. S.

ORIENT, SEX PROBLEMS IN THE.

[WITH SPECIAL REFERENCE TO CHINA.] The two great problems of all animals are those of sex and hunger, the one for the propagation and the other for the perpetuation of the race. With all animals, except man, they are both public. The male among all animals is always ready to fight with other males for the privilege of propagation, but never forces himself upon the female except at such times as she will allow him, which is when she is in heat. At other times the female of most species is ready to protect herself, but especially after she is pregnant. With the human animal the partaking of food is public, and is a time of feasting and rejoicing, but the sex problem is private, and instead of being only for procreation, it is for the most part indulgence for gratification. It is this that has led to the doctrine that "we are conceived in sin and born in iniquity."

In the early history of the human race, there is no question in the mind of the writer but that some of the best people believed human intercourse was, as with animals, only for procreation, or at least should not be indulged in during the period of gestation. The writer believed this until he was twelve years old when he was informed differently. He was not surprised therefore when he found in the Chinese Classics, the following to illustrate their view on the sex problem:

In the Book of Rites we are told that: When a woman is pregnant she should separate herself from her husband until after the birth of her child. While sleeping she should lie on her back; when sitting or standing her body should be erect, and the weight evenly distributed. She should not laugh loudly; should not eat food of bad flavors, or anything that is not cut properly. She should not sit down on a mat or rug that is awry. Her eyes should see no bad sights, nor should she look at obscene pictures. Her ears should hear no bad sounds, nor should she listen to gossip nor vulgar conversation. Her tongue should utter no bad words, and she should be careful of all her language. She should read good books, good poetry, and tell only good stories, and when about to retire she should call in blind story-tellers, and listen to beautiful tales, so that while sleeping her mind might dwell upon these things. All the months of her pregnancy she must be watchful of the things by which her mind is affected, and keep a strict guard on her temper. If she is influenced by good things, her child will be good; if by bad things her child will be bad. If she is careful to obey these rules, when her child is born it will be physically, mentally and morally in a perfect condition. These are some of the rules of gestatory education.

In the *Nu Erh Chung* or Classic for Girls, which is one of the first books taught to girls, we have this verse:

"Of pre-natal education
Be attentive as a mother,
For the influence is mutual of each upon the other,
Whether walking, standing, sitting or reclining have a rule,
E'en in eating and in drinking take care
yourself to school."

The sex problem is a delicate problem to handle of any people or any country, especially of a people whom one respects as much as the writer does the Chinese. I shall try to set forth these problems from the Chinese rather than from the European point of view. And let me say that I have no sympathy for the view of those who describe the Chinese

woman as a labor-burdened, oppressed creature, without a will of her own, a prisoner in her home and a puppet to her husband. The military attaché of the Chinese legation in Paris in a book he has written says: "When a Chinese steps over his threshold he enters a realm ruled by an authority that no European or American man knows anything about." Lao Tzu, an old Chinese philosopher (600 B.C. *Tao Te Ching*) says: "Like the female throughout the world, who by quiescence always overcomes the male." And Buddha of India whose teaching is so popular throughout China says: "Women, though naturally weak, are high and potent in the way of ruling men" (*Asvaghosha, Life of Buddha, Sacred Books of the East*, p. 314). So let us start out with the view that the Chinese woman is just a woman; and whatever woman is throughout the world the Chinese woman is.

I know of no people in the world who have been willing to forego so many of the pleasures of sex associations in social life as the Chinese have, and this for the protection of their women, and especially for the preservation of their virtue. Moreover I know of no people where the women are better cared for, theoretically, than the Chinese. Whether they can carry out their theories in practice, perhaps no one can say. Many of their problems are the result of their social conditions, or shall we say, social rules? Let us first give some of them, that we may see what they entail, and what they avoid.

First, the Chinese have during all their past history foregone all the pleasure of the social intercourse of the sexes (dinners, parties, dances) for the sake of the purity of their women. A young man may never see the young woman he is to marry, nor she him until the performance of the ceremony. The parents make all the arrangements for them without consulting them or their tastes or preferences. The father selects the husband for his daughter, the mother the wife for her son. The father knows

the boys, the mother knows the girls. I imagine I hear some young people say: "I would prefer to select my own life companion." Granted, but this method has its advantages, you know that your wife has not been mulled over by a dozen other men.

Then of course not only the young man and the young woman are to be considered but the families to which they belong. The daughter must go to the young man's home; the wives of all the sons must come to the parental enclosure and the mother must live with them more perhaps than their husbands, and she should be satisfied with them. It sometimes happens that the parents of the boy take the girl that is to marry their son when she is a child and bring her up in their own home, educating her, and when she is a proper age to marry, decide when they shall be wed. It sometimes happens that families exchange daughters with each other when they can make this kind of a satisfactory arrangement. But this does not end the superintendence of parents over them.

On the wedding eve the mother-in-law gives a bit of clean white cloth to her daughter-in-law, which she is expected to return to her the following morning with the evidence of her virginity thereon. We know of a young couple where the young lady had been given this bit of cloth. The boy she married was very bashful. When the morning following the wedding she did not return the cloth to her mother-in-law, nor the following morning, the latter asked her for it, and was told that her son had not embraced his privilege, nor did he do so until she had made advances to him. We have the wife's own testimony to this as a mature woman to some of her women friends, and as we knew her husband, the pastor of a Presbyterian church, we have every reason to believe her story. After the first embrace, the father takes charge of his son and keeps them apart until she is properly healed and in a condition to receive him again. If the evidence is not on the cloth the

girl is usually sent back to her parents.

Writers about the Chinese often make slighting remarks about the impropriety of asking one's host about his wife, or of young people speaking to each other about love, as such a thing would be a hint of sex matters. Personally I think the Chinese have a right to their own social system, and if such things are taboo with them it behooves us as well as the Chinese young people to conform to their customs.

There is no question but that young people in China are subject to the same emotions as the young people of the West, and that it often happens as we have been told that the young man is curious to get a glimpse of the young lady who has been selected for him, and so, as my teacher once told me, he bribes the "middle man" to have her pass a certain place in a cart or chair where he may hide himself and thus see her. If she is not beautiful the "middle man" who is usually or often a woman, substitutes a beautiful girl for her, and she unconsciously passes the place, and the lover expresses himself as satisfied, and is none the wiser until after the wedding ceremony is over, and it is too late to confess his act of bribery.

Another thing about which young men are very sensitive in China is being teased about hanging around the women's apartments, or about his wife, and this makes it an easier matter to keep him away from her during the early days of his married life. Again, the old people in China should be given credit for knowing how much trouble young people are to themselves because of their sex appetite during the late teens and early twenties, but also for furnishing them the means of satisfying this hunger legitimately, and preventing their going to excess.

Let me give an instance that came under my own observation in a respectable family in private life, a member of our church in Peking. He was a successful business man, a florist, who furnished flowers for the palace or the court. His wife needed some one to help her in the

home. They had a son, only an overgrown boy, whom he proposed to have married. The girl to whom he planned to marry him was his senior by two or three years, and I questioned the wisdom of the match. But he assured me that she would be a better help to his wife than a younger girl. But will she not be too old and too much of a drain on the boy? It was then he told me that he would not allow the boy to be with her after the first night for at least a week, nor would he allow them to be together oftener than once a week until the boy had reached a mature age, besides she would likely be pregnant within a month or two and this would serve the triple purpose of furnishing his wife an assistant, himself a grandchild, and his son a wife to keep him at home.

Let me give another instance in perfectly respectable society. It was reported to the mission that one of the pastors had beaten, or whipped his wife, and this on Sunday morning before the church service in the town where he was pastor. It had caused a good deal of gossip and threatened to injure the reputation of the church in that locality. His wife was one of the girls from our girls' school. While in the school she was known to have had a temper of her own, and was a girl who had caused the teachers a good deal of anxiety. This young preacher had wanted to marry her and so they allowed him to do so. For some time all seemed to go well. She was a good housekeeper. We visited that charge on one occasion. Her house was neat and clean. She showed us her cupboard of which she seemed to be proud. It was made of broom-corn stalks plastered with clay, covered over with paper, and was a model of a cupboard.

So after meditating upon and discussing the matter of her husband's treatment of her we decided to send one of the missionaries, a teacher in the Peking University to adjust the matter. He selected one of our best Chinese pastors, a graduate of the University, and "head boy" in the school while a student. to

go with him. On their way the young man said to the missionary, "It would be impossible for any man to live with his wife if he did not whip her."

"Why do you say that?" inquired the missionary.

"You know the reputation she had as a girl in the school. She has a strong will, a quick temper, and not only got into trouble herself, but was constantly getting the other girls into trouble," replied the young man.

"Do you know what the cause of the trouble was?"

"Yes, I know what the cause of this trouble was, and in this case I think she was right and he was wrong, and I have no doubt that you will so decide, and help her to carry out her principles," replied his companion.

"What was it? I ought to know, and have time to think about it, and be able to decide what is the wise thing to do," said the missionary.

"Yes, I think you should know. Of course you know that it was on a Sunday morning before the church service, when he had to preach. Before they got up he wanted her to let him have intercourse with her. She would not do it, because, she said, it was not right to do that on Sunday morning just before he was going to preach." And that was the reason why he whipped her.

"I am glad you told me. I believe as you do that the girl was right and I will tell him so, and make it plain to him that the good man does not spend his time in selfish indulgence just before going into the pulpit." It is unnecessary to add that the young man was given this advice, and we had no further trouble with him.

A second thing that complicates the sex conditions in China is the matter of concubinage. There are two reasons given by the Chinese for concubinage: one is that the wife has not had the good fortune to bear her husband a son, and so she gives him a concubine as Sarah did Abram in the hope that she will supply this defect, and they may have a posterity to worship at the tomb of the

ancestors; the other is that the wife may protect herself during the time of her pregnancy allowing the concubine to serve him. While this is not a universal practice it is the privilege of every one who can afford and support a concubine. However the vast majority of the people are too poor, and it is confined very largely to the rich, to the officials, to the nobles and to the Court. When Li Hung-chang was travelling through America, some one said to him: "Mr. Li, do you believe in concubinage?" "Well," he replied, "if my father had not had a third concubine I would not have been born, because my mother was his third concubine."

This makes it necessary to have eunuchs as servants to do all the heavy work in the Court and the palaces of the Princes, as in other Oriental countries. The Chinese eunuch is different from those elsewhere. In making a Chinese eunuch they cut off all of the sex organs, leaving him as smooth as a woman, and they do this usually when he is very young. The eunuchs from some of these palaces often visited us on errands from their masters. One day when one of them was in my study, having come to get the doctor to go to see one of the concubines who was ill, he said to me, "Our prince is going to take on two more concubines at Chinese New Year." I turned from my desk where I was writing and exclaimed: "Doesn't he have three concubines already?" "Yes, but he is entitled to five." "Doesn't it make trouble in a home for a man to have so many women around?"

"Ah," he said, with that peculiar wave of his hand that only a Chinese knows how to make, "that is a matter difficult to talk about. Naturally when this woman sees him talking to that woman, this one is going to eat vinegar." And she does.

Another eunuch from the palace of another prince came to ask the doctor to go to see a child that was ill. When they arrived they found two of the children ill with diphtheria. The princess

had three daughters and no sons, which is a calamity in a country where sons are necessary in the worship of ancestors, and the prince came to the conclusion that the princess could not conceive a son. In this condition, the princess, like Sarah of old, gave her maid to her husband in hope that they might have a son. But the maid also had a daughter, and she came to the conclusion that the fault was not with her, but with him, that he could not beget a son. The princess had another child and it was a daughter, and she was more than ever convinced that the fault was not with her but with him. The maid had no more children.

It was the maid's little daughter that had first contracted diphtheria, but the doctor was not called until later when the youngest daughter of the princess came down with the same disease. As soon as the doctor examined them she said: "I shall have to go home and get some antitoxin." "That is very expensive, is it not?" inquired the princess. "It is, but we must have it." "Could you not get a cheaper grade for the maid's little girl?" "Perhaps, but I would not advise it." "You get it and I will take the risk," said the princess. The prince sat by but said not a word.

The doctor came home and was upstairs changing her clothes to go over and remain with the children until the crisis was over, in hope of saving the lives, especially that of the maid's little girl, who was the first to contract it. She had been home only a few minutes when the outriders of the prince, then the prince, then his followers, came rushing into our compound. He entered my study in excitement and after a moment asked: "Is the doctor in?" "She is upstairs getting ready to go over to your excellency's palace." "Could I see her before she goes?" I called the doctor and she told me the rest. The prince said: "I heard the princess tell you to get a cheaper grade of antitoxin for the maid's little girl than for her own. Get the same for both. Do not say anything about it,

just give me the bill and I will pay it." But the prince had to ride four miles across the city and four miles back rather than issue an order in his own home, about his own children, contrary to that of his wife.

The doctor got the same medicine for the one as for the other, but in spite of all she could do the little daughter of the maid died. Now it appears that maids have mother hearts the same as princesses, and when the princess saw how the maid grieved over the death of her little girl, she allowed her to have another child, and it was a boy, and you never saw a happier princess than this one when she found that her maid had borne her a son.

Sad things happen to concubines if they disregard the rule that husbands may not come to them without the consent of their wives, or without the concubine having the consent of her mistress. Another of the princesses told my wife this story: there was one of the princesses who suspected her husband, the prince, of spending too much time with one of the concubines. One day when the prince was absent she ordered the eunuchs to dig a grave in the garden. When it was done she ordered them to bring the concubine, throw her into the grave and shovel the dirt in upon her until she was buried alive. That the story is true I have no doubt.

The tale was current about Peking that after the Boxer trouble, when the Court was preparing to flee to Si-an-fu the following incident occurred: when Kuang Hsü attained his majority the great Dowager arranged that he should marry her niece, a girl he did not like. Of course he consented to do so as it was the Dowager who had made him Emperor. Later he was given two sisters, of whom he was very fond, as his chief concubines. The elder of these, called Pearl, was very beautiful and she was his favorite. When the court was preparing to leave, this beautiful concubine went to the Dowager and asked that the Emperor be allowed to remain in Peking and treat with the Allies who

had come to China to quell the Boxer movement. They were in the courtyard at the time, the Pearl concubine was on her knees before the Dowager, when the latter ordered the eunuchs to throw her into a near-by well. This was done and the Court started on its flight to Si-an-fu. Her sister was left behind, but she secured a cart and followed the Court, and afterwards revealed to some of the great officials what had happened to the Pearl concubine in order to account for her absence.

The fact of concubinage will, no doubt, cause a looseness in the thinking of men in the matter of sex relations. A man who has a wife and seventeen concubines may be excused for not seeing why any of them should object to his gratifying himself with a public prostitute when he cares to do so, or when he is absent from all of them. And so it happens that a very prominent public official, like Yuan Shih-k'ai, comes home after such gratification and brings with him a disease which he communicates to all the female members of his household. As the Chinese have no remedies for any of these varieties of sex diseases the foreign doctor is called in to see and treat the various female members of his household and the male doctor to treat him, and the doctors communicate the intelligence to some of the members of the mission, and the female members to others and I to you.

One of the prettiest little princesses once sent for the doctor from our own household to treat her for one of the milder forms of this same disease. The doctor treated her but did not tell her what the matter was, and so won not only her confidence but her friendship as well. At the same time the prince, her husband, was being treated by one of the male doctors of an adjoining mission for the same disease.

There are certain phases of the sex life that must be taken by implication. I have said that young people are not allowed to see each other until after the wedding ceremony. And yet it is true that parents sometimes find their un-

married daughters pregnant. The penalty of this, of course, is suicide. Now if a person in this condition can avoid suicide she will be anxious to do so. And so on the walls of Peking, or shall we say of any Chinese city, there are pasted up all kinds of advertisements. By that I mean small oblong bits of yellow paper on which are printed such advertisements as "Foreign methods of patching the teeth," or "Abortion produced without danger to the patient."

The great hardships of women in China, if we judge from the books for women and girls written by themselves, is their having to live with so many other women of the family. All the wives of all the sons are brought home to the parental roof or the parental enclosure, and one would suppose from the number of times the wives of younger sons are urged not to follow the footsteps of their father-in-law, in order to secure unmerited advantages, that there are dangers of improper relations arising between them. Of course, I suppose that most of my readers know that widows are supposed not to remarry. It sometimes happens that young widows have a child the father of whom is her father-in-law—or shall we say the head of the house—the father of her late husband.

Japan.—A Japanese once said: "The sex passion is the same in the oriental as in the occidental," and the so-called "necessary evil," the public prostitute, is more or less prevalent all over the world. So far as I know, no other country has publicly accepted it as a necessary evil in the same way as has Japan. Here they have set apart a section of many of the great cities called the Yoshiwara, which is given up entirely to houses for the gratification of men's passion, for prostitution. When a man enters, the girls all appear, line themselves up, look as enticing and beautiful as they can and he is allowed to take his choice. Each house, and each person in the house is inspected and examined regularly by physicians to find

out if any of them is diseased and if any are found they are removed to a hospital and treated until they have recovered, when they are brought back.

Since it is accepted as a necessary evil, it becomes more or less respectable, and I have been told that a young lady will take employment, or shall we say, sell herself, for a certain number of years, to the proprietor of one of these houses, receive the money in advance and give it to her brother, to defray the expenses of his college education. And it is said that men sometimes fall in love with some of these inmates, pay for their liberty and take them out into good society as their wives. It is said also that the girls are most polite, kind and obliging to their customers and serve them as a good wife would, even teaching the client the Japanese method of having him lie beside her, instead of upon her, during the process of gratification, and that they have been taught all the little tricks of making the process as pleasant as possible for their patrons.

The chief vice of the European and American people is drunkenness; that of the Chinese is opium smoking; that of India is child marriage; that of the Japanese is the "necessary evil."

While traveling on the 'hautauqua as lecturer our musical numbers were given by a company of Filipinos the head of which company, a fine looking young man, had married a beautiful Spanish girl whom he had met in vaudeville. One day on the train she told this story:

"My husband insists on gratification every night."

"Impossible," we remarked.

"Impossible as it may seem, he has not missed three nights since we were married four years ago."

"But each month you have your menses."

"That makes no difference to him, he insists upon it just the same."

Isaac Taylor Headland, *Home Life in China*, 1914.

I. T. H.

ORTHANES. (From the Greek, *orthos*, upright.) A variety of demon

with the attributes of Priapus, mentioned by Strabo (Casaubon's Pages, 588).

OWEN, ROBERT DALE (1801–1877), American freethought journalist of English birth, is of interest to students of the sexual life of mankind chiefly because of his pioneer treatise on birth control published in the United States late in 1830 or early 1831. *Moral Physiology; or, a brief and plain treatise on the population question* was the first book on birth control published in the United States; and Owen may be justly considered the co-founder with Knowlton (*q.v.*) of the American birth control movement.

The circulation of *Moral Physiology* was reasonably extensive; it went into a fifth edition nine months after first issue; and there were nine American editions in five years. By 1874 from 50,000 to 60,000 copies of authentic editions had been distributed, probably most of them in England. It is doubtful if over 25,000 were sold in the United States. Still, all circumstances considered, this was an extensive circulation for this country.

Upon finishing his education in Switzerland, Owen assisted his father (Robert Owen, 1771–1858) at New Lanark and later in New Harmony, Indiana, where he edited with Frances Wright the *New Harmony Gazette*. In 1829 in the *Free Enquirer* (New York) Owen discussed at length in several articles the population question; later revised them as *Moral Physiology*. Finished and refined in style, it was never prosecuted; but in England (1878) it was successfully prosecuted (*Regina v. Edward Truelove*).

The elder Owen was so impressed with the productively revolutionary character of machine output that he saw no need for population control, foreseeing even more effectively than Malthus, the undoubted effects of the Industrial Revolution upon the production of commodities, especially of food. He had no conception of the principle of diminishing returns. His eldest son, Robert Dale Owen, though he never shared Malthus's fears, softened somewhat the optimistic outlook on population of his father.

While in the United States, Robert Dale Owen read Richard Carlile's *Every Woman's Book*. His casual approbation of it in the *New Harmony Gazette*—an approval of the general point of view rather than of the specific language of Carlile's tract—together with the receipt of a letter requesting contraceptive advice, led him to reflect and write on the subject. More specifically, *Moral Physiology* was published partly to vindicate Owen's point of view in a dispute with the New York Typographical Society and with one William Jackson.



Owen was one of the earliest social thinkers to qualify Malthus by insisting that technological unemployment has the same immediate effect upon the working class as an excessively high birth rate; yet he was not one of the anti-machinery agitators of the period. When he declared that it was "a moral offense of no trifling magnitude to bring human beings into the world without the necessary means to maintain and instruct them," he was in essential agreement with Malthus. He was in essential disagreement chiefly on the means of control. Delayed marriage was Malthus's most constructive suggestion. Owen, like Place and Carlile, thought it conducive to extra-marital relations, and

impractical as contrary to the hedonistic impulses of mankind. The history of the last century has vindicated the Neo-Malthusians as opposed to Malthus in that there is no evidence that, in large populations, postponed marriage has been accepted to any appreciable extent. Only by a very small percentage do the populations of various nations marry earlier today than formerly. The increased availability of higher education for the masses tended to postpone marriage; but high (historically) earning rates at an early age for unskilled and semi-skilled laborers under machine technique have been conducive to early marriage among these classes. The result is that one tendency counterbalances the other.

Owen thought over-population distant; it was a stage we might, in fact, never reach. He therefore considered birth control as a family matter rather than a problem of national economic concern. In this respect his thought reflects new-world, pioneer conditions—an emphasis different from that of Francis Place (*q.v.*). The main method upon which Owen relied was *coitus interruptus*; but subsequent editions, chiefly unauthentic ones, recommended other methods as well.

Robert Dale Owen deserves to be remembered not only as the first writer on birth control in the United States (1828) and as the co-founder of the birth control movement in the United States, but as a distinguished American journalist. He was also the organizer of the first American Labor Party (New York, 1829); assisted in the founding of the Smithsonian Institution; fought, after the manner of J. S. Mill, for the equality of the sexes, more especially in the Indiana Legislature, where he succeeded in amplifying the property rights of women; assisted, at a strategic moment, in crystallizing Lincoln's mind on slavery; persistently advocated a free public school system at a time when such views were considered socialistic in the United States. Also his contribution to pre-Galtonian eugenic theory is by no means small.

Robert Dale Owen, *Threading My Way. Twenty-Seven Years of Autobiography* (New York and London, 1874). Norman E. Himes, *Robert Dale Owen, the Pioneer of American Neo-Malthusianism* (Amer. J. Soc., 1930, 529-47); *Eugenic Thought in the American Birth Control Movement One Hundred Years Ago* (Eugenics, May, 1929).

N. E. H.

PANEL-CRIB, an Americanism for a brothel fitted up with sliding panels for the panel-game.

New York Slang Dictionary (New York, 1886): "Panel-crib, a place especially fitted up for the robbery of gentlemen, who are enticed thereto by women who make it their business to pick up strangers. Panel-cribs are sometimes called badger-cribs, shake-downs, touch-cribs, and are variously fitted for the admission of those who are in the secret, but which defy the scrutiny of the uninitiated. Sometimes the casting of the door is made to swing on well-oiled hinges which are not discoverable in the room, while the door itself appears to be hung in the usual manner, and well secured by bolts and lock. At other times the entrance is effected by means of what appears to be an ordinary wardrobe, the back of which revolves like a turnstile on pivots. When the victim is ready the thief enters, and picking the pocket-book out of the pocket, abstracts the money, and supplying its place with a small roll of paper, returns the book to its place. He then withdraws, and coming to the door raps and demands admission, calling the woman by the name of wife. The frightened victim dresses himself in a hurry, feels his pocket-book in its proper place, and escapes through another door, congratulating himself on his happy deliverance."

PASSIVISM, sexual perversion in which the subject is submissive to the will of his male or female partner in erotic practices. Passivism is a species of masochism. As it is considered normal enough for the female to be passive, the terms passivism and passivist are applied mainly to males.

PEDEROSIS. Forel's term to denote sexual appetite for children; Krafft-Ebing's term for this condition is *paedophilia erotica* (1896).

August Forel (*The Sexual Question*, 1905): "No doubt, most of those who abuse children are also capable of coitus with women, or else they are inverters or sadists; but with many of them sexual passion for children is so marked from their youth upward, that it shows a

special hereditary disposition. For this pathological disposition, thus defined, I propose the term *pederosis*."

PENTHESILEA, queen of the Amazons; in the Trojan war she fought against the Greeks, and was vanquished by Achilles, "who mourned over the dying queen on account of her beauty, youth, and valor." Taunted for his love by Thersites, who treated the queen's body with contempt, Achilles slew that Homeric villain. The legend has numerous variations.

Ovid uses the name of Pentheseila as the generic rival of man (*Remedium Amoris*, 675-76): "Now have you need of arms; here, brave warrior, must you fight: Pentheseila must fall before your steel."

PERTUNDA. The goddess of coitus. (Latin, *pertundere*, to push or thrust.) References to her will be found in the Christian Fathers: Arnobius, iv, 131; Augustine, *De civitate Dei*, vi, 9. Pertunda, according to Arnobius, assisted the bridegroom on the wedding night, in the task of deflowering his bride.

PHILOGYNIST, a lover or admirer of women: opposed to misogynist. For example, Jules Michelet was a philogynist, and August Strindberg was a misogynist.

Thomas Henry Huxley (*Lay Sermons*, 1870, p. 21): "There are philogynists as fanatical as any misogynists, who, reversing our antiquated notions, bid the man look upon the woman as the higher type of humanity; who ask us to regard the female intellect as the clearer and the quicker, if not the stronger."

PHYSIOLOGY OF REPRODUCTION. It is a matter of common knowledge that the great majority of animals both vertebrate and invertebrate, not to mention plants, possess a more or less restricted season at which they breed, and that this season is usually, but by no means invariably, in the spring and summer months. In the human species, however, as with most of the domestic animals, there is no restricted breeding season, although there is evidence derived from the study of savages as well as ancient records and customs among both civilized and uncivilized peoples that primitively man experienced a lim-

itation in the time of sexual intercourse which was more usually in the spring. The facts in support of this conclusion have been set forth at length by Westermarck and by Heape who have laid stress on the indications to be deduced from the erotic feasts of the ancients, these occurring for the most part at certain times in the first part of the year.

In the lower animals it is clear that, broadly speaking, the factors which control the periodic changes in the generative system are of two kinds, (1) external or environmental and so to a great extent at any rate seasonal, and (2) internal or inherent in the animals themselves and more particularly in their essential reproductive organs, that is to say in the testes of the male and in the ovaries of the female and possibly also in the pituitary gland these undergoing alternating periods of activity and quiescence. The periods of rut in the male animal and the corresponding sexual season in the female are undoubtedly to some extent regulated by temperature and food supply.

Thus it is well known that a warm season will often hasten the time of breeding and a cold one retard it while one of the effects of "flushing" or giving special stimulating food to sheep shortly before tupping time is to make the animals breed earlier than they otherwise would. Moreover, it has been demonstrated by Rowan that the use of artificial light will cause the generative organs of birds to develop in mid-winter, and the same thing has been shown by Bissonette for ferrets which can be got to come "on heat" and even to breed at any time of the year outside their normal season by subjecting them for four or five weeks to a daily "ration" of six hours bright electric light after dark in the evening.

That there is a special vitamin which for certain animals at any rate is an essential factor in the discharge of the reproductive processes has been shown by Evans and Burr, for in its absence the formation of spermatozoa in the

testes is inhibited, while in the female, although ova are matured in the ovary, the embryos in the uterus fail to undergo their normal development. This "vitamin E" is known to occur in wheat germ, in lucerne and other green foods and it seems probable that its production in special abundance in the spring season may be a factor in the annual recurrence of breeding phenomena in many species of animals.

But although seasonal environmental causes are undoubtedly largely responsible for the recurrent reproductive processes of animals there is nevertheless an inherent internal rhythm in certain of them, at any rate, and it is noteworthy that with various species the gonads (both testes and ovaries) begin to increase in size even before mid-winter when the duration of the daylight is still getting shorter and the natural food supply may be about at its lowest.

In man under present day conditions at any rate the spermatozoa are produced in the testes continuously throughout the whole year and fertile coition can take place at any time though there may be variation in sexual potency or in the number of spermatozoa which are formed and ejaculated. In the female however, as is well known, there is a menstrual cycle of one lunar month (in some cases a longer or a shorter time) depending upon an inherent rhythm and recurring in correlation with sexual changes in all the organs of generation.

The uterine cycle has been divided by Heape and others into four chief stages as follows:

- (1) The constructive stage, or stage of growth (12 days).
- (2) The destructive stage (4 days).
- (3) The stage of repair or regeneration (7 days).
- (4) The stage of quiescence (5 days).

During the constructive stage the uterus undergoes growth, glandular development, and hyperaemia, i.e., increase in the blood vessels, both in size and number. The changes in a general way are similar to those which occur at the

commencement of pregnancy. From about the middle of this stage three layers may be distinguished in the mucous membrane.

(1) A layer immediately below the surface epithelium in which the cells are tightly packed round the gland ducts.

(2) An edematous layer surrounding the glands and in which dilation of the capillaries has occurred.

(3) A basal layer in which the edema and hypertrophy are absent.

The hypertrophy continues from about six to eight days and then degeneration sets in, in the form of a disorganization and disintegration of the glands of the superficial and middle zones.

Then the congested vessels in the uterine mucosa break down, and blood is freely extravasated in the tissue. It subsequently forms large lacuna-like spaces in the superficial part of the tissue, and thereupon the epithelium ruptures and bleeding takes place in the cavity. The whole, or a great part of the superficial epithelium, is removed as a result of the extensive hemorrhage, and a varying amount of underlying stroma tissue may also be torn away, leaving the lumen of the uterus bounded by a raw edge. The discharged blood, together with degenerate epithelial and stroma cells, constitutes the menstrual clot, and this along with a sanguineo-mucous flow passes down the uterus and through the vagina to the exterior. The amount of blood lost in a woman is on an average about three ounces, and the discharge lasts from three to six days. The uterine glands are active during menstruation and contribute to the discharge.

During the next period, repair sets in, the epithelium being renewed either from cells which did not suffer destruction in the preceding period or from the cells of the glands. At this stage the blood vessels become reduced in size and number. The stage of repair is followed by a stage of apparent qui-

escence, but it seems probable that in many individuals the uterus commences to undergo growth changes which are continued in the succeeding constructive stage.

The Graafian follicles which gradually enlarge and ripen in the ovary discharge their contained ova, in typical cases about the middle of the stage of quiescence, that is, about fourteen days after the beginning of the menstrual flow. According to Knaus, however, this process, which is called ovulation, bears a time relation to the end rather than to the beginning of the menstrual cycle (regarding the cycle as commencing with the first appearance of the discharge) and that it is more correct to say that ovulation takes place normally "on the 15th day before the onset of menstruation." Thus in cases where the cycle is longer or shorter than the normal the time of ovulation will be a correspondingly longer or shorter time after the beginning of the discharge.

After ovulation the discharged follicle becomes converted into the corpus luteum by the simple but rapid hypertrophy of the epithelial cells which formed its inner wall accompanied by an ingrowth of connective tissue from the outer wall of the follicle. The connective tissue is accompanied by blood vessels and forms a highly vascularised network in the fully organized structure of the completely formed corpus luteum. If pregnancy supervenes the corpus luteum persists throughout that period (nine months) but if the ovum fails to become fertilized the corpus luteum begins to regress after about a fortnight and at the end of a month is reduced to little more than a scar. During the period of its activity the corpus luteum contains a yellow pigment (lutein) in the enlarged epithelial cells but in its later stages this disappears and the final form of the corpus luteum may be a structureless body with degenerate cells (the corpus albicans).

The comparison of the menstrual cycle in man with the oestrous or female generative cycle in other mammals is

still a matter of some difficulty and the question as to what stage most closely corresponds with menstruation in the bitch and other species which show marked cyclical changes is not yet finally closed. Before considering this subject further it will be necessary briefly to describe the oestrous or female generative cycle in the lower mammals.

The season of the year when an animal of any species or variety undergoes sexual intercourse has been called by Heape the sexual season for that animal. In most or perhaps all wild mammals the male experiences such a season as well as the female, and generative activity is restricted to such times. In man and most of the domestic animals, however, the male is capable of sexual intercourse at all seasons, and spermatogenesis goes on continuously, although it is probably true that an increased activity is shown at certain seasons which may perhaps depend upon food or other environmental conditions or upon varying habits of life.

The male sexual season, when it occurs, is called the rutting season. Prior to rut the testes increase in size, and both the spermatogenetic and the interstitial tissues display activity, though the exact time relation between the changes shown by these tissues varies somewhat in different species. In those animals in which the testes are not permanently retained in the scrotum the descent takes place at the beginning of rut, and the organs are withdrawn into the abdomen when the season is over. This is the case in many rodents. In insectivores (e.g. the mole and the hedgehog) the testes descend periodically into temporary receptacles. In the mole it is estimated that the testes increase in size by sixty-four times, and the vesiculæ seminales, prostate, and other accessory glands likewise show an enormous growth, which is seen also in the hedgehog. The time for sexual intercourse is continuous throughout rut, there being no short periods of quiescence within the sexual season as there are in the females of many species.

In the female mammal the recurrence of the periods of sexual activity is what constitutes the oestrous cycle. The actual periods at which copulation occurs are the oestrous periods. These recur at rhythmical intervals within one sexual season, as with the mare, cow, ewe, and sow (polyoestrous animals in Heape's terminology), or there may be only one oestrous to the sexual season, as with the bitch (monoestrous animals).

A simple oestrous cycle in such an animal as the dog has been divided into the following periods:

Anoestrus (period of rest).

Prooestrus (period of growth, congestion, and uterine haemorrhage).

Oestrus (period of desire).

Pregnancy or pseudo-pregnancy.

The complete cycle in the monoestrous dog lasts about six months, there being two sexual seasons and two "heat" or oestrous periods in one year, these occurring typically in spring and autumn.

The *anoestrus* lasts about three months, when the generative organs are in a state of quiescence. The Graafian follicles in the ovary probably undergo a slow process of growth and ripening throughout the interval, but they do not become conspicuous upon the ovarian surface until the approach of a new heat period. The uterus is relatively anaemic and the glands inactive. The mammary glands are also inactive unless lactation is in progress after a recent pregnancy.

The *prooestrus*, or period of "coming on heat," is marked by an increased activity on the part of all the generative organs. The ovarian follicles come to protrude from the surface. The uterus undergoes some amount of growth and becomes much vascularized, and the glands become active. Blood corpuscles are then extravasated within the mucous membrane and tend to congregate below the uterine epithelium. The latter ruptures in certain places, and blood is poured out into the cavity and passes down to the vagina and out to the exterior. Bleeding at the vulva may go on for a week or more. The entire prooestrus lasts for ten to fourteen

days. The uterine changes involved, which usher in the period of desire or "heat" proper, have been regarded as of the nature of a preparation for the attachment of the fertilised ovum.

Oestrus is the period of desire, and coition is usually restricted to this time. Ovulation, or the discharge of the ova, takes place during this period. The uterine cavity contains liquid mucus secreted by the glands, and this furnishes a medium in which the spermatozoa swim. The mucous membrane of the uterus is recuperated at those places where hemorrhage had occurred, and external bleeding stops. The whole period lasts about a week.

Oestrus in the bitch is followed either by *pregnancy* or by *pseudo-pregnancy*. The changes which occur in pregnancy in a mammal are outside the scope of this article, but here it may be remarked that as far as the maternal tissues are concerned there is a similarity between certain of the changes which take place under the two conditions, only those of pregnancy are more accentuated.

In the bitch the ovarian changes are identical, the corpus luteum being formed and persisting for about nine weeks. Moreover in both pregnancy and pseudo-pregnancy the uterus undergoes certain changes which relate chiefly to the blood vessels and glands of the mucous membrane. These increase in size, the whole organ assuming an appearance indicative of great activity. The secretion coming from the glands is a source of nutriment to the fetus during pregnancy and is similar to what in ungulates is called "uterine milk"; in pseudo-pregnancy a fluid is likewise secreted as if intended for a fetus. The growth changes in pseudo-pregnancy are less pronounced than in true pregnancy, and are succeeded after four or five weeks by degenerative changes when the glands become shrunken, and their epithelium, from having been columnar, becomes cubical, and some of the cells are desquamated into the lumen. At the same time there is hemorrhage from

the vessels but without leading to external bleeding.

Contemporaneously with the growth of the corpus luteum and uterus, the mammary glands also develop during both pregnancy and pseudo-pregnancy and active secretion generally occurs at or near the end of each of these periods, but the growth of the glands and their subsequent activity are less complete when true gestation does not take place. (See Marshall; Parkes).

The gestation period in the dog is about sixty-two days, and pseudo-pregnancy may be said to last for approximately the same time or probably rather less. It does not terminate so abruptly as true pregnancy. After either period the uterus passes back to a condition of anoestrous quiescence. The occurrence of suckling which follows pregnancy favours the involution of the uterus, which in true pregnancy attains an enormous size, due largely to great muscular development. The changes which take place in pseudo-pregnancy are to be regarded, to speak teleologically, as intended to provide for fetal nutrition and development, but do not actually serve this end owing to the ova not having been fertilised. As will be made clearer later on, both series of changes are due to a stimulus coming from the corpus luteum, which develops irrespective of whether the eggs are fertilised or not.

Polyoestrous animals differ from monoestrous ones in having two or more short recurrent cycles within one sexual season. Thus in the sheep during "tupping time," the ewe may experience a succession of cycles, each lasting about fifteen days, until pregnancy is attained or the sexual season is over. Similarly, the mare, the cow, and the sow each experiences recurrent cycles of three weeks. In all these animals the "heat" period itself is of comparatively short duration, and the actual oestrus may be reduced to a few hours as in the sheep or sometimes in the cow.

The prooestrous changes are relatively slight, and bleeding from the uterine

cavity is rare. Ovulation takes place during oestrus (or very shortly after, as may happen in the cow) (Hammond). There is no prolonged pseudo-pregnancy as in the monoestrous bitch, but the corpus luteum (which is formed as usual from the discharged follicle) proceeds with its development for from one to two weeks, and then undergoes involution, so that by the time a new period is due this structure is in an advanced state of retrogression, though still prominent on the surface of the ovary, and easily recognizable by its yellow color (Corner).

The uterus also undergoes changes indicative of an abbreviated pseudo-pregnancy (the dioestrus), these consisting mainly of growth of the glands, followed by regression at the approach of the next heat. Mammary changes of a similar kind have also been observed, and these, like those of the uterus, are correlated with the development and involution of the corpus luteum. In the cow bleeding, chiefly from the vagina, has been observed after oestrus, and this is believed to mark the termination of a previous shortened pseudo-pregnancy (see Hammond.)

Having regard to the consideration of the facts it would appear that man is a polyoestrous animal, the short cycle extending normally for about one lunar month. But as pointed out already there is no definite oestrus, at any rate in civilized races, and ovulation normally occurs about the middle of the period of apparent rest. Moreover, the constructive or anabolic changes which occur in the uterus must be regarded as representing those of an abbreviated pseudo-pregnancy brought about under the influence of the corpus luteum just as they are in the lower polyoestrous mammals.

The breaking-down changes which characterize menstruation must be regarded as comparable or partly comparable to those that occur in the lower mammal at the end of pseudo-pregnancy. This, however, does not explain the much greater severity which charac-

terizes these phenomena not only in man but also in the other primates. This matter will be again referred to after dealing with the ovarian secretions and other factors which appear to control the cycle.

It should, however, be pointed out that Corner has shown that in some individual monkeys ovulation may not occur during certain cycles and consequently no corpus luteum is formed and in such animals there is no constructive stage and menstruation takes place out of an unbuilt-up uterus. It is believed also that this condition occurs sometimes in man. It is possible therefore that in these cases menstrual degeneration represents the prooestrus and that in normal instances the process is comparable to pseudo-pregnant and prooestrous destruction telescoped into one period. Certain recent experimental observations on the bitch by Robson and Henderson somewhat favor this view.

That the oestrous and menstrual cycles are controlled by internal secretions or hormones elaborated by the ovary has in recent years been definitely established. The original evidence based on transplantation experiments (in which the ovary was removed from its normal position and grafted on to an abnormal position and yet continued to exert its usual influence on the uterus and on the oestrous cycle in spite of its ordinary nerve connexions having been severed) has been amply confirmed by the results of injecting chemical substances derived from the ovaries.

Oestrus-producing compounds have also been obtained from other sources and crystalline preparations have been prepared by Doisy in U. S. A., Laqueur in Holland, Butenandt in Germany and Marrian in England. Two compounds of similar physiological activities, keto-hydroxy-oestrin or oestrone, $C_{18}H_{22}O_2$, and trihydroxy-oestrin or oestriol, $C_{18}H_{24}O_3$, were isolated of which the first was the more active. Moreover, a number of other derivatives with varying degrees of activity have been obtained and one of these, a dihydro compound

(dihydro-folliculin) is four times as effective as the natural hormone oestrone.

The distribution of the oestrus-producing substances in the animal body presents a number of puzzling problems which are not yet solved, for such bodies have been found not only in the ovaries and in the circulating blood but also in the placenta (from which Collip has obtained a biologically active ester of oestriol) and in larger quantities in the urine during pregnancy.

Furthermore, Zondek has obtained even greater amounts of oestrin from the urine of the stallion. The presence of such substances under what at first thought might be considered to be inexplicable conditions can only be vaguely interpreted on the assumption that the oestrins are products of metabolism which are disposed of or excreted when they subserve no function or purpose to the organism (as in the male animal or during pregnancy in the female) but have acquired a definite physiological significance and value when other organs and parts of the body respond to their presence to the advantage of the animal in the discharge of the sexual and reproductive functions. They may in fact be compared to carbon dioxide which at first was merely a waste product but which in the progress of evolution has become a most important factor in the regulation of the respiratory movements in the higher animals by its action on a particular centre in the brain.

Just as the oestrous or follicular phase of the cycle is believed to be due to oestrin or its derivatives so it is now known that the luteal phase of pseudo-pregnancy or pregnancy or the abbreviated stage commonly called dioestrus (which, as we have seen, occurs in man and other polyoestrous animals) is brought about through the action of the hormone progesterin which is elaborated by the corpus luteum. The earliest experimental evidence on this matter was that adduced by Fraenkel, who removed or destroyed the corpora lutea in the ovaries of rabbits and found that

in the absence of these bodies the pregnancy came to an end.

In recent years Corner has found that luteal extract given to a rabbit oöphorectomised shortly after ovulation would cause the typical pseudo-pregnant hypertrophy, or if the ovum had become fertilised would carry the pregnancy through to a successful conclusion. In view of these and other experiments by various investigators it would seem that the functions of the corpus luteum are to promote the predecidual development of the uterus and the maintenance of pregnancy. There is also evidence of a similar kind indicating that the hormone progesterin is a factor in the early development of the mammary glands. Progesterin has now been prepared not only from the ovary but also from the chemical compound, stigmasterol (the sterol present in the soya bean) and has been found by Butenandt to have the probable formula $C_{27}H_{48}O_2$.

It would thus appear that the two phases in the active part of the oestrous cycle are brought about by the two ovarian hormones oestrin (or its derivatives) and progesterin. Here it may be pointed out that by making a sequence of injections of oestrin and progesterin into oöphorectomised women Kaufmann has produced full menstruation, and comparable results have been obtained with animals. Moreover, Robson and Henderson by injecting oestrin into bitches towards the end of pseudo-pregnancy have brought about a condition of destructive change in the uterine mucous membrane resembling menstruation in the Primates. This experiment has an interesting bearing on the question as to the homologies between menstruation in the Primates and pseudo-pregnancy and prooestrus in the lower mammals.

In most species of mammals in which the reproductive processes have been studied ovulation takes place spontaneously, or irrespectively of coition, during or about the time of oestrus. In women also ovulation occurs spontaneously, at least usually. In the rabbit

(Heape), the ferret (Marshall), and the ground squirrel (Foster), however, the occurrence of ovulation depends upon the orgasm which is normally brought about by coition. Thus in the rabbit the follicles rupture and the ova are discharged about ten hours after copulation with a male. In such animals ovulation appears to depend upon a nervous reflex, but as will be explained below the process is brought about through the intermediation of the anterior lobe of the pituitary gland.

Nevertheless, the change over from the follicular to the luteal or gestational stage is clearly due in such animals, at any rate, to the ovarian processes consequent upon ovulation. If the ovarian follicles do not rupture owing to the non-occurrence of coition the oestrous phase in the rabbit and in the ferret is prolonged almost indefinitely though eventually bleeding may take place in the interior of the follicles, these becoming "hemorrhagic." Moreover, the abnormal nymphomaniac condition of various animals (cows, mares, etc.) which instead of showing the ordinary sexual periodicity are "always on heat" is associated with persistent unruptured follicles which are generally cystic, and sometimes contain a blood clot.

It is now definitely known, however, that the functional activity of the ovaries as well as of the testes in the male is dependent upon a hormone or hormones elaborated by the anterior pituitary and that in the absence of this organ the gonads in the young animal fail to develop and in the adult undergo atrophy. The first experiments dealing with this subject were those of Evans who showed that simple saline extracts of ox pituitary caused the ovarian follicles of rats to become converted into luteal tissue.

Shortly afterwards two groups of workers, Zondek and Aschheim in Germany and Smith and Engle in U. S. A., obtained striking results from the implantation of pieces of anterior lobe tissue into young rats and mice, the ovaries of these animals undergoing marked development followed by ovula-

tion and the formation of luteal tissue and the corresponding oestrous and post-oestrous changes in the accessory organs. These results were in general agreement with the earlier observations of clinicians that abnormalities in the anterior pituitary were correlated with sterility and failure to function on the part of the reproductive organs.

It has been supposed that there are at least two gonad-stimulating hormones produced by the anterior pituitary, since, speaking generally, alkaline extracts have produced marked luteinization and the implantation of pituitary tissue has brought about oestrous conditions. The precise converse of these results has, however, also occurred so that it is still uncertain whether there are really two anterior pituitary hormones controlling the two main stages of the cycle or only one reproductive hormone formed by this cycle.

Indeed, the balance of probability would seem to be that there is one principal reproductive hormone formed by the pituitary, this being produced in varying quantity depending upon the external environment and the stimuli derived therefrom. Gonad-stimulating substances have been found in human urine, especially during pregnancy in the so-called protein A and protein B which more or less correspond physiologically to the two anterior pituitary principles, as well as in the placenta (Zondek and Aschheim, 1928, Zondek, 1931). Moreover, substances have been extracted (Bellerby) both from the pituitary and from the urine which cause ovulation and there is an anterior pituitary hormone which appears to act directly on the mammary gland (Corner). Extract of urine of pregnancy (and sometimes also anterior lobe extracts) often give rise to hemorrhagic follicles or blood spots in the ovary and these are unruptured.

The chemical composition has not been determined in the case of any of these anterior pituitary substances, and in no instance have they been obtained in crystalline form. In the absence of fur-

ther evidence it seems probable that many of these substances, which have slightly varying biological properties, are products of metabolism or chemical derivatives of one gonad-stimulating hormone in just the same kind of way as there are a number of oestrus-producing substances that are derived from the principal hormone of the ovary or possibly from one resembling it formed elsewhere. As shown by Catchpole, Cole and Pearson, whereas some of these gonad-stimulating substances are excreted in the urine there are others which after circulating in the blood are destroyed somewhere within the body.

As stated above ovulation in the rabbit and certain other species normally takes place only after the orgasm, but can be induced also by injecting an extract of anterior pituitary or of some anterior pituitary-like substance. It is interesting to note that ovulation can likewise be made to occur in the rabbit by electrical stimulation of the central nervous system, either through the brain or through the lumbar part of the spinal cord (Marshall and Verney). The rabbit must, however, be in an oestrous condition with protruding follicles on the ovaries, and there is some delay in the process of ovulation, which takes place from 17 to 24 hours after the stimulus is applied. In view of the work of other investigators (Bellerby, Fee and Parkes, etc.) it is to be presumed that the stimulus acts through the intermediation of the anterior lobe of the pituitary.

If the stimulus is not very strong it may result in the formation of hemorrhagic follicles or blood spots which are similar to those sometimes produced after the injection of anterior pituitary-like substances. The nervous pathways to the pituitary have not yet been worked out (Haterius) but it seems certain that the nerve reflex which normally produces ovulation acts on the anterior pituitary which then releases a gonad-stimulating hormone.

It seems extremely probable also that the production of gonad-stimulating

substances generally is under the control of the nervous system, being secreted, partly at any rate in response to stimuli from outside and that the effects of light irradiation in bringing about oestrus in ferrets and other animals (Bissonette, etc.) are due to nervous stimuli acting through the eyes, optic nerves and anterior pituitary gland. Thus in blind or hooded ferrets oestrous is delayed or inhibited, the animals failing to react to the light stimulation (Marshall and Bowden). It may be suggested further that the stimulation of courtship phenomena at the pairing season in many animals and birds subserves the purpose of promoting an effective synchronization of the reproductive processes in the male and female and so tends to ensure fertility.

The cause of parturition is still an only partially solved problem but it seems clear that the process is conditioned by several different factors so that it cannot be said that any one particular stimulus is the "cause of birth." The retrogression of the corpora lutea in the ovaries is one of the more important conditions and it is noteworthy that when these bodies arrive at a comparable stage of decline at the end of pseudo-pregnancy (as shown by the bitch, the rabbit, and the marsupial cat) the animal commonly displays habits, such as nest-making, which are ordinarily associated with actual parturition at the close of gestation.

In confirmation of this it is to be pointed out that Snyder and others by inducing ovulation in the latter part of pregnancy have produced a new batch of corpora lutea and that these have been the means of prolonging the pregnancy for an additional ten days with a consequent increase in the weight of the young at birth. It may well be, therefore, that among other functions the corpora lutea inhibit the uterine contractions which otherwise would occur, and according to Knaus the luteal hormone is directly antagonistic to the active principle of the posterior pitui-

tary which ordinarily has a powerful effect in producing uterine contraction.

The development of the uterine muscle is another factor in parturition while it is also known that oestrin prevents its activity, as shown by Robson, who concludes that this hormone progressively increases the sensitivity of the uterus until the state characteristic of parturition is attained, the influence of the corpus luteum in the meantime declining. Furthermore, it has been shown by Bellerby that intravenous injection of anterior pituitary extract in the pregnant rabbit may not only induce ovulation but is generally associated with abortion or resorption of the foetuses, and it is suggested that this result is brought about by the secretion of oestrin consequent upon stimulation by the pituitary hormone.

It has been remarked at the beginning of this article that in man there is no sexual season or period of rut and it follows that the process of spermatogenesis goes on in the testicular tubules throughout the whole year. Similarly, the hormone of the testis which is manufactured by the interstitial cells between the tubules is also produced continuously. Like the ovarian internal secretion it maintains the secondary sexual characters in a state of full development and the accessory reproductive organs or glands (epididymis, vesiculæ seminales, prostate, and Cowper's glands) in a condition of functional activity.

The epididymis acts as a storehouse for the spermatozoa prior to ejaculation and these are maintained within its one long coiled tube by a secretion derived from its walls. The low temperature of the scrotum which contains both the testis and the epididymis of each side (5° lower than the general body temperature) is probably a necessary condition for the production and maintenance of the spermatozoa (Moore). The latter are motionless while within the testis and epididymis, but become actively mobile in the vas deferens or duct conveying them to the urethra in the

process of ejaculation. In the female tract, however, they soon lose their activity and their fertilizing power goes even more rapidly (in man probably in less than two days).

Outside the body mammalian spermatozoa can be kept best at low temperatures or at the temperature of the environment when they remain motionless. Under these circumstances and protected from bacterial contamination in plugged tubes they may remain capable of fertilization for seven days (Waltton). The vesiculæ seminales, prostate and Cowper's glands contribute to the medium in which the spermatozoa swim and possibly provide them with nourishment, but the presence of these secretions is not essential to the power of fertilization.

In the lower mammals where there is a period of rut the amount of interstitial tissue varies according to whether the animal is in a state of rut or a state of quiescence, but in man there is no record of periodicity and on the assumption that these cells produce the male hormone no such variation would be expected in those species which are uniformly active sexually at all seasons of the year. Moreover, as already stated, there are no short periods in the male corresponding to the dioestrous or pseudo-pregnant periods of the female mammal.

Apart from the well-known effects of castration there is evidence amounting to proof that the interstitial cells manufacture the male hormone. Ligation of the vasa deferentia or grafting of the testis to an abnormal position, like irradiation by X-rays, causes degeneration of the spermatogenetic tissue and the tubules, but does not interfere with the secondary sex characters nor with sexual desire. (For reference, see Marshall; Allen.) Partial masculinization of the oöphorectomised females by testicular grafts has also been brought about, but rejuvenation by such methods in cases of senility is at the best only of short duration.

The hormone which has been extracted from the testis and from male urine has been obtained in crystalline form as a ketone with the formula $C_{19}H_{30}O_2$. It has now been prepared from cholesterol (Butenandt). It is called proviron and androsterone. When injected it produces growth of the accessory male organs and secondary male characters (e.g. the vesiculae, etc., in the rat and the comb in the capon. See Callow and Deanesley; Callow and Parkes; Dodds).

The relation of the anterior pituitary and of its functions to those of the gonads is similar to that of the corresponding relation in the female except there is no suggestion of more than one gonad-stimulating hormone. Thus removal of the anterior lobe causes testicular atrophy while injection of extracts promotes growth and functional activity of the male organs and characters (Collip, Selye and Thomson).

In the lower mammals which have a breeding season the factors controlling sexual periodicity are entirely or almost entirely environmental and therefore seasonal. The same is true for the female in all animals below the mammals. The environmental factors—light, heat, food supply and whatever else there may be—act through the intermediation of the nervous system and thence through the anterior pituitary gland which by its hormonal action stimulates the gonads.

An example of such action, as we have seen, is seen in the effects of light rays in inducing oestrus in the ferret, as shown experimentally by Bissonette. In man and other polyoestrous animals the short periodic rhythm of the dioestrous or menstrual cycle must depend chiefly on the phases in the production and action of the ovarian hormones, and we have seen that the change from the oestrous to the luteal phase is related to the occurrence of ovulation. This latter process may occur spontaneously during oestrus or be excited by coition or experimentally by the injection of an anterior pituitary hormone (or some metabolite which is similar in its action)

or by electrical stimulation of the central nervous system.

In such animals as the rabbit at any rate there is no evidence of any inherent pituitary rhythm. It is probable, however, that the conditions associated with the lutealization of the ovary such as occur during pregnancy and pseudo-pregnancy react on the pituitary just as they do on other organs in the body, but the manner in which many of these reactions are brought about is still obscure.

It must be borne in mind also that we have little knowledge at present as to how many of the chemical substances found in the urine or elsewhere which produce an effect on the animal under experimental conditions possess a real physiological significance in the organism living naturally, and it may well be that certain of these substances are "metabolites" that serve no function and are excreted as waste products. The first part of the chain of causation in producing sexual activity is however fairly clear—environmental factors, nervous system, anterior pituitary gland, gonad—but it is obvious also that the general conditions of nutrition and their direct influence on the endocrine organs and the gonads have an important share in conditioning the generative functions.

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F. H. A. M.

PIMPS. Ten thousand years before Man began to record his history, Ugla, sweetheart of Lionheart the mighty hunter, was walking through the forests of prehistoric Asia. She encountered Gar, skillful maker of furs and arrowheads. She soon saw that Gar wanted her more than she had ever wanted him. They talked, bargained; he offered her his finest furs, or his arrowheads fash-

ioned from flint. She accepted him, loved him for an hour. She looked at the furs with longing eyes, but knew that her lover, Lionheart, needed arrowheads. So she took the flints in payment, and gave them to her lover.

Lionheart was delighted with the gift. He praised her, loved her, embraced her. Then he said, "Maruk has some wonderful spears. Why don't you be nice to him and get me some? It would take me moons of hunting to pay for even one."

Ugla was glad to do something for her lover. She sought out Maruk, maker of spears. She walked enticingly before him, made him lust after her. She sold herself for three spears, and was happy in his embrace because she was doing it for her love. She did not degrade herself; the lover in her arms was Lionheart.

Ugla was the world's first prostitute, and Lionheart was the first pimp. Since then, they have been ever with us. Ugla has been deified and damned. She has had the sanction of highest moral and religious tradition, and she has been cursed as a wrecker of civilization. She has been sponsored by governments, and imprisoned by the laws of governments. She has made possible the organization of conquering armies, and been anathematized for crippling armies.

Civilization has nearly forgotten that Ugla never stood alone. People do not understand that she has been working in the service of her love. They see her either as the sole earner of ill-gotten gains or the victim of slavery. Man does not realize that prostitution is nearly always voluntary, that in the shadow of almost every prostitute is the figure of a pimp.

Let us stop and examine this word *pimp* and make clear just what we are discussing. *Procurer, panderer, cadet*, and other English euphemisms do not replace it. *Keeper* and *exploiter* are closely allied in meaning, but they refer to persons who profit from illicit sex through methods that differ from the pimp's.

In modern usage, the pimp is the man

who receives the earnings of prostitutes. He may be the husband, bully, or enslaver of the whore, but usually he is, or professes to be, her lover. He is her business manager, protector, moral supporter and comforter. He is the man for whom she works, the man she trusts, and by a queer psychological quirk, he is frequently her equivalent for a husband. He is, in short, the anti-social creature who makes it possible for a prostitute to remain in business, protecting her from the law and from the jealous wrath of her more virtuous sisters.

The word crept into the English language in 1607, and was used from time to time by established writers to represent a mischievous or malicious agent for any sort of evil. *Trug-man* was used in 1592 by Robert Greene, as "setting or standing at the door like a stale, to allure or draw in wanton passengers refusing none that would with his purse purchase me." Markall referred to the pimp as "Some base rogue without the fear of God or man that a whore keepeth as a friend."

It can thus be seen that the profession of pimping, as we know it to-day, has long been recognized in English literature. The same is true in other lands. In France he has been variously referred to as *Alphonse*, *Louis*, *souteneur*, *macarreau*, or *cadet*; in German he is *der Kuppler* or *Zuhälter*; the Spanish call him *El Alcahuete*. In 1935 the American underworld sometimes calls him a *mack*, *her man*, or *McGimp*. The whore speaks of *my man*, *my heart*, *my husband*, or *my lover*.

PROSTITUTION

Our first records of prostitution are our first records of pimps. Ancient Chaldea, semi-legendary mother of civilization, is the original home of hospitality, and of prostitution. Wandering tradesmen visited Chaldea, and were entertained by Chaldean merchants. The host offered more than food and wine; he knew that man must always subjugate himself to the biologic urge; he offered to his visitor, woman. It is a far cry from the semi-barbaric father who offered his wife and daughter for the pleasure of his guest and customer to the modern pimp who infests our cities, but fun-

damentally both operate on the ancient principles of Uglia and Lionheart.

Chaldea prospered, and established a precedent which has since been followed by every capitalistic society. Education, art, poverty, and vice lived cheek by cheek, nurtured on wealth, and the sanction of society was extended to every influence, wholesome or otherwise, that was of advantage to the reigning lords. Prostitutes brought business and profits; ergo, they were respectable. So, why not wives and daughters?

The Bible tells of Nimrod, mighty hunter before God. Wise old Omar, tent maker and mathematician of Persia, further immortalized the "mighty hunter who drank deep." But no historian has yet given Nimrod his true place in the Sun; it was he who permitted a fusion of laws and sanctioned the sacred prostitution that gave revenues to the Ancient Church.

Herodotus (i, 199) tells us: "The Babylonians have a very shameful law: every woman born in the land is required, once in her life, to repair to the Temple of Venus and give herself to a stranger. . . . When a woman has taken her place in the line she is not permitted to return home until some outlander has tossed money on her knees and cohabited with her outside the sacred place. . . . No matter how small the sum, she cannot refuse it, for this money has become sacred." Here we see, in the first historical connection between Church and Woman, that Woman is a whore and the Church is her pimp.

The proceeds from sacred prostitution were often given to Venus, and employed as sacrifices to solemnize the loves of Venus and Adonis. Again we find historical precedent: Man's conscience about prostitution led him, at this early date, to rationalization. Truly, these submissive maidens were embracing Adonis, not the repulsive, sweating travelers who had wandered into the sacred brothel.

Babylon remained for centuries as the center of licentiousness. Fathers and husbands gladly prostituted their daughters and wives. Missionaries went to foreign lands, propagating the faith. Everywhere in ancient Mediterranean civilization we find sacred prostitution, with the Church as beneficiary. Sometimes the women accepted their required fees from strangers for the glory of God and Venus (Astarte, Anaitis, Mithra, Mylitta, etc.), but were so pleased with their men that they insisted on returning gifts of far greater value than the fees. This has its counterpart in regal Rome, where empresses secretly visited brothels as inmates, and shows that even in that day there were women who preferred prostitution to any other life.

Like everything else in the world, the sacred profession of prostitution became more and more commercialized. Families were often supported during drab periods by the earnings of wives and daughters from the household. Fre-

quently these women became so fond of prostitution that they continued to practise it, even when there was no economic pressure. It is not on record that a husband ever lost his liking for easy money enough to force a life of monogamy on his wife.

It became the practice for young maidens to earn money for their dowry by prostitution. Revolting as it may seem, they became all the more respectable for their efforts; the greater their earnings, the greater their skill, and the more their husbands loved them. Many respectable matrons continued their profession after marriage, and again we find that few husbands objected. These periods of ancient civilization show a strange similarity in thought processes to the reasoning of many twentieth century intellectuals.

Sacred prostitution flourished among the ancient Hebrews. Priests of Baal played the rôle of pimps, and refined the practices of Babylon to include the sale of effeminate men, and even dogs, for the purposes of sodomy. Moses made desperate efforts to stamp out these practices, forbidding the offering of prostitutes' wages at the Temple, and specifically interdicting the "price of the dog." However, his efforts were largely ineffectual; money changers were not the only anti-social creatures who frequented the Temple of Jehova.

Ancient history has shown us the husband, father, and church as exploiters of their women, profiting from the sale of sex by their loved ones. But it is Rome, daring and upright maker of laws, mother of modern legal codes, that gives us our first authentic record of a partnership between the prostitute and the State.

Roman statesmen were realists; they licensed prostitutes to do business and protected them in their traffic, molesting only those women who had failed to pay their fee. Strictly speaking, the State was not a pimp, but it fulfilled many of the obligations assumed by modern pimps. It is to the eternal credit of these ancient lawmakers that they kept the partnership on an open and honest basis, giving the State her share of the proceeds. In the twentieth century we find prostitutes and statesmen just as closely allied; in fact, the prostitute gives up an even larger percentage of her earnings than in ancient days. To-day, however, it is a silent partnership, and the politician personally pockets the State's share of the proceeds.

Through history man has always managed to provide for his sexual needs. Adventurers embraced the native women of foreign lands. Columbus' sailors took syphilis back to Europe. Many a *mestizo* of Latin America is descended from a proud noble of old Castile. There were mulattoes in Africa long before negro slaves were transported to America. The blood of famous explorers flows through the veins of many Eskimos in northernmost Greenland. When Imperialism led conquerors to regions

where there was a scarcity of native women, obliging governments recruited and transported women from home to take care of the biologic imperative of the empire-building adventurers.

The history of pimping has paralleled the history of prostitution. Through the Dark Ages pimps remained in the background while their whores solicited itinerant strangers. Rigid laws were passed to protect the inmates of convents. Housewives embraced wandering swineherds so their husbands might have new pigs for the sty. Tavern keepers kept a supply of buxom and acquiescent barmaids and waitresses to attract customers for food and drink. Sometimes the services of these ladies were free to good customers; sometimes they collected a fee which was turned over to the landlord.

The industrial age caused a serious maladjustment in the business of distribution. This affected the profession of prostitution just as much as it affected the manufacture of shirts or underwear. Willing prostitutes in dying villages brought home meager earnings to their lovers; houses of prostitution in thriving cities were short of girls. Because it is illegal and undercover, the vice business did not adjust itself as readily to changing conditions as the recognized industries, and there was a period during which white slavery flourished.

Girls were seduced and led into prostitution. Others were lured from their homes by various pretexts, imprisoned in brothels, ravished by male hangers-on until all pride and innocence had vanished, and then put to work as whores. Willing and unwilling inmates alike were exploited shamelessly; they were charged such exorbitant rates for food, lodging, and clothing that they were constantly indebted to the keeper.

No matter how the modern sociologist may laugh at the bugaboo of white slavery, we must not forget that it was a real and serious problem as recently as fifty years ago. Credit for changing conditions and making the lives of prostitutes more tolerable must be given to

that much denounced creature, the pimp.

It was the pimp who found employment for girls who were eager to become prostitutes, thus eliminating the necessity for enticement. It was he who watched over the relationship between his girl and the brothel keeper, and saw to it that she received her fair share of the proceeds. It was he who saw the need for cleanliness, and taught his girls to protect themselves and their customers against venereal infection. Selfish as he may be, the pimp has given the prostitute better living conditions, better clothing, better food, and greater independence.

The literature on the modern pimp is quite large. A recent book, *On the Road to Buenos Aires*, throws a good deal of light on the South American pimp. Three recent publications by the Bureau of Social Hygiene have considerable to say about the pimp, here and abroad.

Abraham Flexner in his scholarly work, *Prostitution in Europe* (1915), tells us that from fifty to ninety per cent of the prostitutes in large European cities support their men. He quotes police figures to show that in most large cities, outside of Scandinavia, the percentage is much closer to ninety than to fifty per cent. In spite of the fact that the European pimp does not enjoy the political power of his American brother, it is very difficult for European policemen to convict pimps, for the simple reason that their women will not testify against them unless there is reason to believe that the pimp has been making love to another woman.

George J. Kneeland made a study of *Commercialized Prostitution in New York City* (1913). His comments on pimps are very illuminating, because they are made at the period when vice first began to adapt itself to chain store methods of doing business. He shows the pimp as a boy who grew up in pool halls and cigar stores, frequently becoming a member of minor criminal gangs, or developing into a political guerilla. Sometimes he is selected as a pimp by an admiring girl from the neighborhood who has recently embraced the profession of prostitution; at other times he has been instrumental in a girl's seduction and has urged her to take up the profession. He describes the tactics of love-making, terrorizing, and protection from police interference that have given the modern pimp so much power in the world of vice.

Howard B. Woolston, in *Prostitution in the United States* (1921), gives an interesting side light on the pimp as a real estate agent, and goes on to show that in most cases houses rented

for purposes of prostitution, often by upright, respected business men, bring extortionate rentals. I have often wondered how community leaders could justify themselves for raising individual rentals from \$40 to \$100 per month, if the property were used for legitimate business, to from \$300 to \$900 per month, if the property were to be used in prostitution.

WHY PROSTITUTES HAVE PIMPS

There are at least five valid reasons why the modern prostitute has a pimp.

1. *The pimp as a husband or sweetheart.*—Love justifies all things. Bernard Shaw says that a married man will do anything for his wife. The same is true of the wife or sweetheart. She will do everything for her man to prove that she loves him. "Darling if you love me you will sell yourself." "Darling, I love you so much I will stay with another man and bring you home the money." Conversations like this have brought many pimps into being.

Fully 75% of all pimps are married, but only half of them are married to the whores who support them. It may have been true once that the way to a woman's sex was through a wedding ring, but it is not true in the twentieth century. More than half of the prostitutes have been married, but the pimp they work for is seldom their husband. In the underworld, as in polite society, it is a very common practice to switch husbands or to live with a man who is not one's husband. However, married to each other or not, the pimp is always his prostitute's sweetheart. The well-known song, *My Man*, is a favorite in brothels, and is a perfect illustration of the average prostitute's attitude toward her pimp. The most frequently quoted words are,

"It costs me a lot, but there's one thing I've got,

It's my Man.

Two or three girls has he, that he likes as well as me,

But I love him.

He isn't much for looks,

But I love him.

He isn't any good, he isn't true, he beats me too,

What can I do?

Oh, my man, I love him so, he'll never know.

*All my life is bare, but when he takes me in
his arms,
All the world is bright—for a while—
What's the difference if I say
I'll go away,
When I know that I'll come back, on my
hands and knees,
Some day?
No matter what my man is, he is mine and
I am his,
Forever more!"*

In communities where most pimps and prostitutes originate, promiscuous sex relations are quite common. Every adolescent boy learns, early in life, that the easiest way to seduce a girl is to tell her he loves her; young girls learn, just as readily, to justify themselves by saying, "I did it because I loved him." Many prostitutes have a surprising amount of sexual experience in their early days before learning the commercial value of sex. Very frequently it is the woman herself who first suggests that the amorous couple become prostitute and pimp. It must be understood that today, as always, many women welcome the life of prostitution and prefer it to honest work. If the reader can understand how a woman will labor in a factory to help support her husband, there should be no difficulty in comprehending why a certain type of woman is very glad to use her sex organs to support the man she loves. Most prostitutes feel no shame or compunction, and often take genuine pleasure in working at the profession of their choice.

2. *The Pimp as a Master.*—With some prostitutes and pimps the relationship is mutually voluntary, but in many cases fear is the dominant factor. There is a type of woman who is afraid of her father, her brother, and of her husband. If the same type is a prostitute, she is afraid of her pimp. "If you don't live with me and hustle for me, I'll tell your mother and father what you did"; "If you don't hustle for me, I'll kill you; I'll cut your throat"; "If you don't give me every cent you make, I'll tear you to pieces"; "If you tell the police I'm your pimp, I'll cut your heart out when I get out of jail"; "If you ever

stay with a man without getting money from him, I'll beat you black and blue." Threats of this type are no small factor in the whore-pimp arrangement.

The majority of pimps abuse, beat, and sometimes horribly mutilate their women. I've seen hundreds of black eyes, cut lips, broken heads, and bruised bodies, all acquired from the girl's "loving man." Some men beat their women only when they have a reasonable excuse; others do it daily. Men who live a low, vicious life often have some finer sensibilities, and are ashamed and disgusted with themselves. Some of them are too timid and cowardly to fight with men; they vent their hate upon their women. Brutality often relieves their pent-up disgust and bitterness, and since the most glorious experience men and women have in their sacred bedrooms is the reconciliation after an outrage, some of the most precious moments in the life of a miserable creature come when her pimp is kneeling at her side, weeping and begging for forgiveness. "He isn't any good, and beats me too, but I love him so," or "I was afraid of him," often tells the story.

3. *The Pimp as Employment and Business Manager.*—A prostitute needs customers, and they are not always easy to find. It takes as much brains to become a successful, money-making whore as it does to be a successful business woman. Here is where the pimp shines. He knows how to get customers for his girls. He often begins by getting some of his friends and members of the gang, but this sort of business usually produces little profit. So, he learns where business is good. He may place her in a house of prostitution, get her a job in a tavern, or put her on the street in a good location. Police, reformers, gangsters, and other factors often force them to move; the prostitute always has a temporary job. The pimp sees to it that she has steady employment; if they are driven from one location he has another spot ready for her.

Whores are often lazy or dumb, or both. They wouldn't know where or

how to earn money if the pimp did not arrange matters and force them to get up in the morning ready for work. Frequently a woman is recovering from a jag, or is moody and disposed to say, "I don't feel like working to-day." It often takes a good deal of argument and coaxing, or even a good beating, to make her go to work.

If business is dull in one neighborhood, the pimp may transfer his broad to a better one. If conditions make it necessary to find work in another town, the pimp makes the arrangements. It is surprising how much time and effort it takes to keep one prostitute profitably occupied. If a pimp has three or four women he has a full time job.

4. *The Pimp as Impresario*.—A prostitute is a public servant; she needs nearly as much stage managing and heralding as a concert artist. If she has a record as a joy giver and good fellow, her earning capacity is double that of a nonentity or a girl with a bad reputation. Favorably known prostitutes get the best jobs. If they work in a call flat they get the best customers. When there is a convention in town, the house detective of a hotel may make arrangements for her to be on the reception committee.

Many whores have poor taste in dress and the use of cosmetics. The impresario often has splendid taste, and teaches them how to dress and make up attractively. He selects her friends and residence, takes her to dances and parties where he can show her off to advantage. Prostitutes are proud of their men, and will work themselves to the limit to be seen riding around in a car with their pimp.

"Class" has great value in the underworld. A well-dressed woman who spends an evening in a cabaret with her man can collect a list of valuable telephone numbers, especially if he leaves the table at strategic intervals. Just as big business has learned the value of a publicity agent, so has the prostitute.

5. *The Pimp as a Protector*.—Jail is a concomitant of prostitution. Nearly

every hustling woman is arrested sooner or later. Most of them are arrested many times. The better the business, the greater the danger of arrest. If a woman is to continue hustling she must have someone to get her out of jail and look after her interests while she was incarcerated. She needs a bondsman, lawyer, someone to pay her fine. Most of all, she needs a "fix." In America the "fix" plays an important part in all walks of life. Taxpayers try to "fix" their taxes; speeding motorists try to get a "fix" in when they receive a summons. The criminal, when arrested, does not depend on justice; he wants a "fix." The whore, in common with so many respectable citizens, is not concerned with justice; she wants someone who can talk to the judge or district attorney and have her turned loose.

The pimp is a "fixer," has contact with a "fixer," or claims he has. Many whores take up with pimps purely for this reason. They say, "I'll hustle for you, but every time I get pinched, I want you to see that I get discharged." The pimp will, of course, promise everything.

It will be easily understood why so many successful prostitutes have pimps who are politicians, and why so many pimps are anxious to have political affiliations. The more power a pimp has in court, the easier it is for him to get women. Even if the pimp is not the "fixer," he has connections with the bailiff, committee man, or precinct captain. He exchanges votes for friendly voices in the court room. Most judges and district attorneys can justify themselves in freeing a prostitute by saying, "What good will it do to send the poor devil to jail?"

It is conservatively estimated that from ten to fifty percent of an American prostitute's earnings finds its way into the hands of courts, policemen, or politicians. Usually, it is the pimp rather than the girl who pays over the money. Many grafters who would scorn payment direct from the girl, have no scruples about accepting payment from

her pimp, either in cash or political support.

After shielding his girl from the law, the pimp's job as protector is only half done, for he frequently must act as bodyguard and bouncer. Many of the prostitute's customers are drunks, crooks, and gangsters. If she is unprotected, many of them will try to avoid payment. Others will force her to practise all sorts of perversions. If alone or unguarded she may be mutilated or suffer terrifying experiences at the hands of sadists or masochists.

Bandits consider prostitutes fair prey, and safe because a "stick-up" is seldom reported by a prostitute. Regular houses have their own guards, but if a girl is a lone wolf working in a room alone, her pimp is usually handy to protect his meal ticket. If necessary he will fight his woman's battles, using fist, tooth, knife, club, or gun. It is surprising how well some of these men can fight, and how well they do the job of protecting their women.

THE MARKET FOR PROSTITUTES

Man has succeeded in commercializing nearly every phase of existence, including his biologic imperative. Centralization, efficiency, and elimination of waste are the keynotes of modern business, and have become just as important in the field of vice. Statisticians have calculated consumption figures per capita for shirts and shoes and sealing wax, and the number of manufacturers and distributors necessary to supply the demand. Herewith is a calculation of the sex market, and the number of prostitutes needed, figured on a basis of 100,000 population. It is more universal in its application than most statistical studies, because prostitutes and their business managers can adjust their price tags to meet the purses of their customers more easily than most industrialists. In this day and age no reasonable fee is refused. Service will be rendered in exchange for any article that can be of service, either to the pimp or whore. We have heard prosti-

tutes declare, "If you haven't any money, I'll take your shirt; I think it will fit my man."

A PROSPECTUS FOR THE SEX BUSINESS

Chicago, with a population of three and one-third million, has 754,000 married men, half of whom may cheat more or less regularly. It has 475,000 single men, and nearly 70,000 who are widowed or divorced, many of whom have regular sex contacts. It is visited by over 100,000 unattached men each week, many of whom delight in visits to houses of prostitution or in dates with "party girls."

According to a sex census by Reitman and Roloff, -these men experience at least 500,000 extra-marital sex contacts per week, exclusive of the genuine love affairs between unmarried sweethearts. Of these contacts, about 75% are bought and paid for, from public prostitutes, kept women, and "gold diggers." Although women in the last two classifications receive an inordinately large share of the money spent on sex, their activity is relatively limited; the census shows that fully 65% of the illicit sex transactions are handled by less than seven thousand public prostitutes, an average of less than fifty contacts per girl per week. The average price for sex in Chicago in 1935 is slightly over one dollar. Girls in houses have to split with the keeper, but in some cases receive extra compensation in the form of commissions on drinks, slot machines, player pianos, etc. Streetwalkers have to pay high prices for rooms. After adjusting these differences, we find that the average public prostitute in Chicago earns little more than \$25 per week for her pimp.

Chicago, with transients, high proportion of single men, and the advantage of many suburban communities where there is little or no commercialized vice, is not altogether typical of the country as whole. However, by using Chicago figures as a base, we find that an average city of 100,000 will have about 10,000 sex contacts per week purchased from public prostitutes. From this we must

subtract about 25% to make allowance for different conditions, which leaves us a total of 7,500 commercial sex transactions per week.

In an average city of 100,000 there are about 30,000 men of virile age. Of these 20,000 are faithfully married or chaste, leaving about 10,000 who have illicit sex. It seems probable that the same ratio would apply here as in Chicago, which would indicate about 6500 contacts with prostitutes per week, if each man averaged one per week. It is probable that this figure is more accurate than the 7500 arrived at by a comparison with the figures for Chicago, but we will use the latter figure to be on the safe side.

A professional prostitute can very easily take care of twenty men per day. Many have served fifty to one hundred. Such a woman can, without overexerting herself, accomodate an average of one hundred men per week the month around. This means, then, that seventy-five prostitutes could very easily handle the demand in any community of 100,000 persons. Since we have seen that in Chicago the average professional whore only has about fifty engagements a week, two hundred girls would be the maximum that could earn a living by hustling in a community of 100,000. We reiterate that most extra-marital contacts are mutual affairs, not business engagements.

THE WHITE SLAVE BUGABOO

It is absurd to-day to consider the possibility of anyone abducting black slaves in Africa and transporting them to the United States. There is already a surplus of black labor in this country. Just as certainly, talk of white slavery to-day is ridiculous, because there are far more prostitutes available than the market can absorb. If it were possible for me to insert the following want ad in the pages of any metropolitan newspaper, I believe my office would be stormed with applicants:

"WANTED: Good looking young women to work as public prostitutes in a \$1 joint. Wages \$25 per week."

The services of a pimp in finding employment for his broad are so valuable that he almost invariably collects all of her earnings. However, he is forced to spend a considerable portion of it on her in his capacity as impresario. Expenses for clothing, beauty treatments, and entertainment are so heavy that unless her earnings are considerably above the average his profit from the arrangement is negligible. She gains from the fact that the pimp enables her to live in better style, eat better food, wear better clothing, and receive more entertainment than she could if she were altogether on her own.

THE PIMP AND SOCIETY

An old lady once stood in a prison yard, watching a group of convicts. She turned to a guard and exclaimed in surprise, "My, don't they look human!" If she had seen a group of pimps she would have said the same. The marks left by vice, liquor, dope, exploitation and abuse of women can be detected by few.

The average pimp is a well-dressed, apparently well-behaved young man of twenty-eight or thirty. He is usually thin, about five feet eight or nine inches tall. He is apt to have dark eyes and hair. The majority of pimps are American born of foreign parentage, usually from Italian, Greek, Polish, or Jewish stock. However, all negro prostitutes, and a few white, have negro pimps.

Most pimps have fairly good educations. Many are high school graduates, and not a few have college degrees. They are surprisingly well read, showing a preference for sporting, mystery, and adventure stories. They are high livers and good spenders, and are frequently seen in the lobbies of our best hotels. You can always find a group of them on the Rialto; at Broadway and 42nd in New York, Clark and Randolph in Chicago, and the Picadilly in London. They are patrons of the theatre, confirmed first nighters.

Practically all pimps are enthusiastic sport fans. They go to all important

fight and wrestling matches, love horse racing and follow important meets from one section of the country to another. They are ardent rooters for the home town baseball, football, and hockey teams. Practically all are gamblers, and drop a large portion of their women's earnings on cards, dice, horses, and roulette.

As one would expect from gentlemanly men-about-town, all pimps drink, and drink well. Many are drunkards. The percentage of pimps who are dope fiends has been the subject of much controversy. It is true that most drug addicts would gladly be pimps, but there is a tradition in the underworld that a girl is "in for a lot of grief" if she takes on a dope-fiend lover. He needs a great deal of money, has little energy to help her, and is constantly in trouble himself. Less than 10% of pimps are addicts, and the majority of these have prostitutes who are on dope. Whenever one finds either a pimp or whore who is a dope fiend, it is almost certain that the partner will be the same.

Pimping, like prostitution, is an illegal, hazardous business. If a man is known to be a pimp and does nothing beyond taking care of his women and loafing around town, he is quite sure to be picked up by the police. Consequently, many pimps have "legit" jobs as bartenders, waiters, cab drivers, workers in gambling joints, hotel clerks, etc. They find it advantageous, as do all racketeers and underworld types, to have a job and permanent address in a respectable neighborhood. Pimps and their women seldom live in vice districts.

Whenever possible the pimp has a permanent address where he is registered on the polls. His vote is far more precious to him than to the average American citizen. If he is a well known pimp the politicians consider him "hot" and do not want him as a precinct captain or ward committeeman, but they always welcome his services, and constantly exchange favors for votes. A pimp is more valuable on election day than sev-

eral average families, for he has no scruples against voting several times and his sense of civic responsibility is such that he is always willing to vote for the stay-at-homes.

Most pimps are, to some extent, criminals. Some are out and out "grifters": pickpockets, shoplifters, petty larceny thieves, and confidence men, but always second or third raters. It is well known in the underworld that no first class crook will pimp. This is traditional, and it is correct. Manhood in any walk of life demands the ability to support one's women.

We have seen that the traditional tales of pimps enslaving girls are usually fiction, and that as far as the individual prostitute is concerned, or the spread of venereal infection, the pimp is a help rather than a hindrance to society. His real damage is through his alliance with corrupt politicians, his participation in crime. He is an ally of nearly everything that is vicious in our civilization. The solution of the pimp problem is simple; we need no new laws. Like the gambler and gangster, he carries within himself the germs of his own destruction.

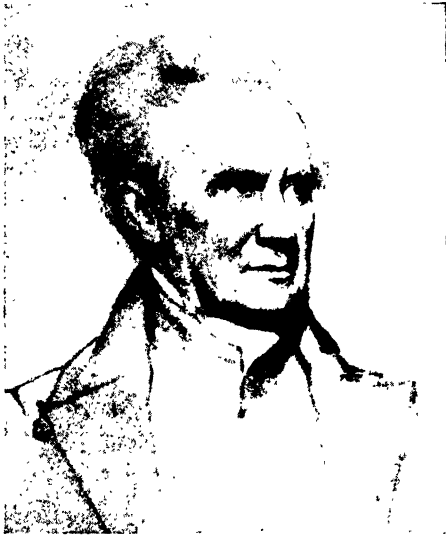
[With the collaboration of Ted Leitzell.]

B. L. R.

PLACE, FRANCIS (1774-1854), English reformer. The life and works of Francis Place are of interest to the readers of this Encyclopaedia chiefly because he was the founder, in the English-speaking world, of the modern birth control movement. Others before him advocated contraception; but it was he who first attempted to organize a popular movement by distributing practical medical handbills, by educating the populace to the social desirability of contraception through books, pamphlets, leaflets, etc., and by gathering about him a small band of disciples to further his reform objects. Place's name is, however, associated with other reforms of the early nineteenth century: the legalization of trade unions, penny postage, manhood suffrage, and, in general, those

movements which he thought would elevate the economic and social status of the working classes.

He grew up in poverty, a member of a large family, eventually learned the tailoring trade. By the time he published his able book on population, *Illustrations and Proofs of the Principle of Population* (London, 1822. Reprinted London and Boston, 1930), he was a man of fifty, retired on a modest, hard-earned competence. To his library came many of the political figures and notable



social reformers of the period to take counsel with him.

The *Illustrations and Proofs* was significant in that it was the first book in the English language on population which recommended birth control rather than Malthusian moral restraint as the more sensible way to control population. Many of the arguments in favor of contraception now commonly heard were first worked out by Francis Place with the collaboration, no doubt, of Jeremy Bentham and James and John Stuart Mill. Place directly, and indirectly through Richard Carlile, influenced Charles Knowlton and Robert Dale Owen to initiate the American social movement for birth control. While Place used personal, familial and social

arguments in defense of contraception, his main thesis was an economic one: the chief cause of poverty is low wages. Low wage rates, in turn, are caused primarily by an over-supply of unskilled labor. By taking a leaf from the book of trade unionism, i.e., by restricting their numbers, the general body of laborers could raise their economic status. His favorite contraceptive was the sponge, but he also mentioned *coitus interruptus* and tampons of various kinds, especially of cotton or wool. His medical handbills were reprinted in the *Lancet* (London) of August 6, 1927.

Graham Wallas, *Life of Francis Place* (London, 1898 and 1918). James A. Field, *The Early Propagandist Movement in English Population Theory* (Bull. Amer. Econ. Asso., 1911). Reprinted in Helen Fisher Hohman (Ed.), *Essays on Population and Other Papers by James Alfred Field* (Chicago, 1931, See pp. 91-129).

N. E. H.

POPULATION, SEXUAL ASPECTS OF. Fertility at the Present Time.

The growth or decline of the population of a country or district, apart from migration inwards or outwards, is determined by the balance of births and deaths. The only aspect which is intimately connected with man's sexual behavior is the study of the rate of production of living children. At the present time this is also the most significant factor in determining population growth. It is unfortunate that our knowledge of the numerical strength of our species only covers the last hundred years. Previous to this all estimates, whether contemporaneous or not, are little more than guesses. We know that throughout this prestatistical period wars, epidemics and famines resulting in great loss of life were not infrequent. But the experience of the World War and other wars within the statistical period has demonstrated that such catastrophes have only an ephemeral effect on population trends.

We are therefore driven to one of two conclusions: either that fertility can never have been very high for long periods or, alternatively, that high fertility was formerly accompanied by high

TABLE I
ESTIMATED POPULATION OF THE EARTH BY CONTINENTS, 1650-1930
IN MILLIONS

	1650	1750	1800	1850	1900	1930	Annual Increase Per 1000 1900-30
Europe	100	140	187	266	400	505.1	7.8
Asia	250	406	522	671	859	992.5	4.8
Africa	100	100	100	100	141	142.4	0.3
N. America	7	6.3	15.4	39	106	168.75	15.6
S. America	6	6.1	9.2	20	38	82.75	26.3
Oceania	2	2	2	2	6	9.88	16.8
Total	465	660	836	1098	1550	1901.38	6.8

Sources. National Bureau of Economic Research, International Migrations; ed. by W. F. Willcox.
Sweden, Statistiska Centralhyran, Apercus Statistiques Internationaux.
League of Nations, Statistical Year-book, 1931-32.

mortality at all ages from birth onwards and in all circumstances. Some corroboration for the view that fertility may not always have been high in the 50,000 years of the human story may be derived from observations on primitive peoples. The available information has been summarised by Carr Saunders.¹ Most observers agree that among non-industrialised peoples large families are rare, from two to five being the typical size. We also know that everywhere and at all times before the nineteenth century mortality was very high.

A hundred years ago the population of the world was about a thousand million. To-day it is about two thousand million. Clearly the last hundred years has seen an expansion of population such as cannot have occurred during the previous period. India and China make up about two-fifths of the world population at the present time. They are still in the prestatistical stage. We have no exact knowledge of population growth in these countries but the general consensus of opinion seems to be that their numbers are increasing very slowly, if at all, at the present moment. Of the rest of the world we have fairly accurate knowledge. Our knowledge of recent changes in the population of the earth is summarised in Table I. It includes reasonably plausible estimates as well as more accurate figures.

If the rapid rate of increase shown in Table I were likely to continue, over-

population might seem an imminent danger. It is not likely to continue.

Of all attempts to generalize about the facts of population growth, that of Malthus has attained most publicity.

The first edition of the *Essay on Population* was published in 1798. The views put forward in the first edition were somewhat modified in the second edition, so that some controversy exists as to the exact nature of the author's views. They can best be summarised by saying that according to Malthus human populations tend to increase in geometrical ratio, while their means of subsistence can only increase in arithmetical ratio. The latter part of this statement has been abundantly disproved in the form Malthus put it. However, the importance of this theory does not depend on these ratios. It lies in the view that as the means of subsistence increases, population also tends to increase. Although the phenomenal population increase in the nineteenth century may have appeared to substantiate this belief, closer analysis of present tendencies shows that it has now no significance.

According to the U. S. Department of Agriculture Year Book for 1930, "with a population only 20 per cent. greater than that of 1900, the world's wheat and rye production is now something like 30 per cent. greater, and its production of corn, oats and barley taken together, about a third greater." The further possibilities of increased productivity which could be opened up by an unrestricted application of scientific knowledge are almost unlimited, while population increase is slowing down.

The most outstanding feature of the nineteenth century was the rapid and continuous decline in mortality. Changes in mortality are most compactly summarised in the mean expectation of life. This is the number of years lived on the average by a newly-born child. The

¹ Carr Saunders, *The Population Problem*.

significance of this figure is that, if a sufficiently large number of the newly-born are considered, the mean expectation of life indicates the total number of years which will be lived by all the children taken together, provided that death-rates at all ages remain constant. If the mean expectation of life is 50 years, 1,000 newly-born children will have altogether 50,000 years of life. The figures for Sweden best illustrate the changes that have taken place, since accurate figures are available over a longer period in this country than in any other. In Sweden the mean expectation of life for both sexes has risen steadily and continuously from 35.2 years in 1755-75 to 62.23 years in 1926-30.

In the United States estimated figures for the white male population of Massachusetts are 34.5 in 1789 and 58.1 in 1929. Similar changes have taken place over the whole of America, Europe and the British Dominions. The lowest mortality is found in New Zealand where the mean expectation of life for the newly-born at the present moment is about 65 years. Of more significance for population growth is the number of years lived by women during which they are capable of reproduction. The child-bearing period is usually taken to be from 15 to 50 years, so that the maximum number of years which could be lived in this period is 35. The average number of years actually lived by women between 15 and 50 in Western and Northern Europe is about 30 years, on the basis of the death rate of 1933. In the United States it is probably slightly less. For 1909-11 it was 26.38 in the 11 original Registration States. During the last 150 years the total length of life in most industrialised countries has been nearly doubled. It is obvious that this postponement of death has been sufficient to account for a very large population increase. It might seem as though population must continue to increase as long as the mean expectation of life continues to increase.

The effect of improvement in the risk

of death is, however, limited in two ways. Extension of the length of life leads to a continually increasing population only so long as the number of children born is sufficient for replacement. If fertility falls far below the replacement level, nothing short of a recipe for immortality can save a population from extinction. There does not seem any valid reason for assuming that the rise in the mean expectation of life must necessarily stop at any given figure but no means are known at present of extending the period of life in women, during which fertile ova are produced.

In the present state of biological knowledge the maximum figure is 35 years, which would be attained if all girls born lived to be 50 years. As the present figure for Western Europe is 30 years, it will be seen that, if the rate at which women produce children remains unaltered, lower mortality is not going to affect greatly the total number of children born.

Considerations of public health have directed the interest of statisticians very largely to mortality data, so that methods of measuring mortality have been well developed and the main facts are clear. In contradistinction accurate methods of measuring fertility have only recently been applied. Popular opinions about fertility are derived from a consideration of crude birth rates. These can be very misleading, since the crude birth rate depends very largely on the sex and age composition of the population. An example given by Kuczynski² will make this clear:

"If in the State of Colorado, in the year 1860, every second female between 15 years had borne a child (which would have been a fertility such as has never been served in the world), the birth rate at that year would still have been only 16 per 1,000 (about that of England and Wales in 1911) because the females between 15 and 50 years constituted only 3.2 per cent. of the total population."

Further, fertility varies at different ages, being greatest between 20 and 30 years, so that a population with a pre-

² Kuczynski, *Fertility and Reproduction*.

ponderance of old or very young women will have a relatively low birth rate. Adequate methods of measuring fertility have been developed by Boeckh, Lotka and Kuczynski. For purposes of measuring population growth males can be ignored and we need only consider the rate at which females are reproducing themselves. If we know the annual fertility rates, i.e., the number of children born in any calendar year to women at each year of age, we can add these together and so obtain the total number of children who would be born to a woman passing through the whole reproductive period, provided the fertility rates measured remain constant.

The total fertility rate when multiplied by the ratio of newly-born girls to boys gives the average number of girls born to a mother during the whole of her life. This is called the gross reproduction rate. It does not take account of the fact that all girls born will not live to be mothers in their turn, so that it does not give an exact measure of the rate of population replacement. It does indicate how fertility is changing and one important conclusion can be drawn from it alone. If the gross reproduction is less than unity, the present generation of mothers will be replaced in the next generation by a smaller number of mothers, so that the population must eventually dwindle, whatever the death rates are. Most of the gross reproduction rates which have been calculated are given in Table II. The use of brackets indicates that the age of mothers at birth was not known in those countries, so that the figure given is an estimate.

Registration problems in the United States make it difficult to calculate a gross reproduction rate for the United States as a whole. The author has calculated it from the official figures for the continental registration area and found it to be 1.13 for 1930. More complete birth registration might have brought this up to 1.2 or over. In the light of the past fall however, it is unlikely that the gross reproduction rate is much, if

at all, above unity at the present time. We see, therefore, that in the United States and Western and Northern Europe fertility is now too low to maintain a stationary population. The rest of Europe with the exception of Russia is rapidly approaching this stage.

Since some newly-born girls will die before they become mothers, the combined effect of fertility and mortality on population is represented by the number of girls who will be born to every newly-born girl. The average number of female children who will be born to every newly born girl is called the net reproduction rate. It is simply calculated by weighting the annual fertility rates by the proportion of female survivors in the life table. The net reproduction rate is a measure of the rate at which the reproductive part of the population is replacing itself.

All actual populations have an age composition which is the result of the changing fertility and mortality rates which have prevailed in the past. Lotka has shown that if fertility and mortality rates remain constant, the population will eventually reach a stable age composition. Complete stability is not attained for a very long time, but after sixty years of constant fertility and mortality rates, the changes in age composition are very slight. After this time the whole population will increase or decrease in a generation in the proportion indicated by the net reproduction rate. If this rate is 2, the population would double itself in a generation (about 30 years); if it is unity, the population would be stationary, and if it is .5, the population would be halving itself in a generation. The net reproduction rate is a measure of the rate of increase or decrease to which a population is tending, if the conditions prevailing at the time of measurement were to continue.

The highest net reproduction rate hitherto ascertained was that of the Ukraine in 1896-1897. It was 1.96. Fifty years ago the net reproduction rate in Western Europe was about 1.5. By 1933 it had dropped to about 0.76 for the

TABLE II.—GROSS REPRODUCTION

Years	Denmark	England	France	Germany	Norway	Sweden	Austria
1871-1875	—	—	—	—	} 2.221	2.147	—
1876	—	—	—	—		—	—
1877	—	—	—	—		—	—
1878-1880	} 2.220	—	—	—		} 2.163	—
1881-1884		—	—	—	—		
1885		—	—	(2.459)	—		
1886-1888		—	—	—	—		
1889-1890	} 2.140	—	—	—	} 2.142	2.049	—
1891		—	—	—		—	
1892		—	—	—		—	
1893-1894		} 1.447	—	—		—	1.968
1895	—		—	—	—		
1896-1897	—		—	(2.366)	—		
1898	2.042		—	—	—		
1899	} 2.042	—	—	—	} 1.944	} 2.485	
1900		—	—	—			
1901		—	—	—			
1902-1903		1.954	—	—			2.064
1904-1905	—	—	1.310	} (2.126)	—		
1906-1907	} 1.851	—	—		—	—	
1908-1909		—	—	—	} 1.799	} 2.266	
1910		—	—	—			
1911	} 1.671	—	1.232	—	} 1.853	—	
1912		—	—	—		—	
1913		—	—	—		—	
1914-1915		—	—	—		—	
1916-1919	} 1.523	—	} 0.766	—	} 1.661	} 1.414	
1920		—		—			—
1921		(1.326)		—			—
1922		(1.213)		—			—
1923	} 1.384	(1.176)	} 1.146	} (1.116)	—	1.713	
1924		(1.120)			—	1.280	
1925		(1.086)			—	1.221	
1926		(1.062)			—	1.169	
1927	} 1.166	(0.992)	} 1.096	(0.971)	—	1.121	
1928		(0.994)			—	1.069	
1929		(0.961)			—	1.010	
1930		(0.963)			—	1.001	
1931	—	(0.930)	—	—	0.895	—	
1932	—	(0.899)	—	—	—	0.865	
1933	(1.04)	(0.845)	(1.00)	(0.79)	—	(0.83)	(0.80)
1926-1927.							

1926-1927.

whole of Western and Northern Europe. The lowest rate recorded is that of 0.5 for Saxony in 1933. Bearing in mind the qualifications previously mentioned the net reproduction rate for the United States in 1930 was 0.98. The only industrialised countries which offer an exception to the general rule of rapidly declining fertility are Russia and Japan. As late as 1926-28, European Russia had a net reproduction rate of 1.7. Fertility in Japan is very high and mortality has declined, so that the population is in-

creasing rapidly. Owing to the inadequacy of the available data, there is some doubt whether fertility has begun to decline or not.

In the light of results obtained by new statistical methods various estimates of the effect of present trends in fertility and mortality on future populations have been made. Thompson and Whelpton have prepared several estimates for the United States on different sets of assumptions. Excluding effects of immigration the population reaches its

RATES, 1871-1933¹

Bulgaria	Finland	Hungary	Ukraine	Canada	Australia	New Zealand	Years
—	2.388	—	—	—	—	—	1871-1875
—	—	—	—	—	—	—	1876
—	2.420	—	—	—	—	—	1877
—	—	—	—	—	—	—	1878-1880
—	2.363	—	—	—	—	—	1881-1884
—	—	—	—	—	—	—	1885
—	2.400	—	—	—	—	—	1886-1888
—	—	—	—	—	—	—	1889-1890
—	—	—	—	—	—	—	1891
—	—	—	—	—	—	—	1892
—	2.278	—	—	—	—	—	1893-1894
—	—	—	—	—	—	—	1895
—	—	—	(3.65)	—	—	—	1896-1897
—	—	—	—	—	—	—	1898
—	—	—	—	—	—	—	1899
—	—	—	—	—	—	—	1900
—	—	2.605	—	—	—	—	1901
3.176	—	—	—	—	—	—	1902-1903
—	2.140	2.477	—	—	—	—	1904-1905
3.155	—	—	—	—	—	—	1906-1907
—	—	—	—	—	—	—	1908-1909
—	—	—	—	—	—	—	1910
—	—	2.396	—	—	1.677	—	1911
—	—	—	—	—	—	1.541	1912
—	1.716	—	—	—	—	—	1913
—	—	—	—	—	—	1.445	1914-1915
—	—	—	—	—	—	—	1916-1919
—	—	—	—	—	—	—	1920
—	—	1.829	—	—	1.517	—	1921
—	—	—	—	—	—	1.442	1922
2.502	—	—	—	—	—	—	1923
—	1.402	—	—	—	—	—	1924
—	—	—	—	—	—	1.301	1925
2.217 ¹	—	—	(2.485)	1.649	—	—	1926
—	—	—	(2.24)	—	—	—	1927
—	—	—	(1.98)	—	—	—	1928
—	—	—	—	—	—	—	1929
—	—	1.338	—	1.555	—	1.179	1930
—	—	—	—	—	—	1.077	1931
—	—	(1.18)	—	—	1.068	(1.053)	1932
—	—	—	—	—	—	—	1933

Kuczynski, *Measurement of Population Growth*.

maximum between 1955 and 1960. Estimates of the future population of England and Wales for the next 100 years have also been made by the present author. If the effects of migration are excluded and fertility and mortality rates are assumed to fall as they have been falling in the past ten years, the population would reach a maximum in 1939. About 30 years from now, the rate of decrease would be so rapid that at the end of a century from now the population would be one-tenth of its present size.

Agencies of Declining Fertility

A considerable amount of space has been devoted to recording what is known about the rate at which living children are produced. The reason for this is that observation of human reproduction is largely confined to the end result. Knowledge of the various factors which intervene from fertilisation to the birth of a child is difficult to obtain. Man's power to control his own reproductive process confers special characteristics upon it. Of the factors involved in the production of living children, the first requirement is the formation of func-

tional gametes in both sexes. The male gamete must then be deposited in the body of the female at a time when it can meet with a fertilizable ovum, and no mechanical barrier or toxic agent must be present to prevent the sperm fertilizing the ovum.

This involves two issues. One is the frequency with which the male gametes are deposited in the body of the female, the other is the accessibility of the ovum to them. Finally, the fertilized ovum must survive through the nine months of pregnancy. Each of these factors is subject to individual variation, arising partly from the genetic constitution of the individual and partly from the fact that sexual behaviour is highly conditioned by external agencies. All such individual differences contribute to observed differences in fertility.

Sterile individuals of both sexes are known to occur. The term sterility as applied to males usually implies that the first requirement is not realized, that is to say, the functional gametes or spermatozoa are not produced in sufficient numbers, and also includes purely nervous derangement producing complete impotence. In females sterility is used to imply at least three possible contingencies. One is that the secretions of the generative tract are unfavourable to the activity of the sperm. One is that ovulation fails to occur regularly. A third is the early resorption of the embryo—i.e., a failure to meet the third requirement in the production of living children.

There is no evidence that fecundity, defined as the production of functional gametes has changed significantly within historic times. Probably at no time has the possible fecundity of human beings ever been fully realised. The widespread dissemination of contraceptive knowledge has made it possible to widen still further the gap between fecundity and fertility. In order to assess the rôle of contraception it is necessary to examine the magnitude of human fertility in the absence of deliberate interference.

Generally speaking, contraceptive technique involves interference with the second requirement enumerated above. The sperm is prevented from fertilizing the ovum after coitus has taken place. Recent physiological research does not permit us to neglect the frequency of coitus as a factor materially affecting the probability of conception. This consideration is almost universally neglected by writers on contraception. In addition to this, anatomical displacements of the internal organs of the female may facilitate or otherwise the entrance of the seminal fluid into the uterus. Postural differences in executing the sexual act and the relative size of the sexual organs of the two partners involve differences in the degree of penetration effected and the likelihood that ejaculation will or will not occur in close propinquity to the cervical orifice.

In addition variations in fetal mortality due to genetic constitution or environment demand attention. The high foetal mortality known to exist in the later stages of pregnancy is one presumption in favour of the view that there is considerable mortality in the earlier stages. This presumption is abundantly supported by experimental evidence, which shows that very early resorption of the embryo can be produced by dietetic deficiency and lactation in animals. Early resorption of embryos due to lethal genes is also known to occur in mammals. Very early resorption of the embryo would frequently be dismissed as an irregularity of menstruation and would not be classified as a pregnancy.

Since all that can be accurately observed as a result of contraceptive technique is the end-product of a complicated biological process, more knowledge of this kind is essential to a complete study of its effects. Every known feature of the reproductive process is subject to individual variability. In many animals differences in fertility have been shown to be genetically determined. In animals capable of form-

ing conditioned reflexes the sexual impulse can be conditioned. This has even been shown to be true of the rat. Much more so is it true of primates, as Zuckerman has shown. In baboons the sex act, so far from being a simple reflex, cannot be satisfactorily carried out unless an educational period has been passed through at the right age. Although such conditioning of the sex impulse with its great capacity for variability in behavior might seem too obvious to need statement, it is frequently overlooked. The divorce laws of many countries are still founded on the assumption that sex is a simple reflex. Since sexual behavior is a conditioned pattern, differences in the freedom from supervision which children enjoy may well contribute to the differences in fertility which are found in different social classes.

The need for more scientific information about the reproductive physiology of human beings, as a basis for any conclusions concerning the rôle of contraceptive practice in population growth, emerged in the evidence given by the heads of religious bodies to the Commission on the Declining Birth Rate. Both Catholic and Jewish authorities agree in condemning unreservedly all contraceptive methods involving any mechanical or chemical device or any departure from what is popularly regarded as the normal method of performing the sexual act. However, both Catholics and Jews sanction the practice of confining intercourse to a part of the menstrual cycle commonly called "the safe period" when it is believed that conception is unlikely to occur. The possible existence of a safe period is an important issue. Its significance has not been fully recognized by statisticians who are disposed to interpret the recent decline of the birth rate in European countries as exclusively due to the spread of contraceptive methods.

If there actually exists a period in which conception cannot take place, changes in frequency of sexual inter-

course and of the time chosen for it must be regarded as possible contributory factors to a declining birth rate in addition to deliberate family limitation. From the biological standpoint, the existence of a safe period involves three suppositions. Each of these can be tested by experimental methods in the case of other mammals. None of them has been established by direct observation in the human species.

The first is that the duration of life of the sperm within the female body is short compared with the length of the menstrual cycle. The second is that the period of survival of the unfertilized ovum is short in comparison with the length of the menstrual cycle. The third is that the time at which ovulation occurs in the menstrual cycle varies within narrowly prescribed limits. Strictly speaking, only the first two suppositions are relevant to the possibility that small changes in the frequency of sexual intercourse might statistically affect the birth rate. The third is only of importance in so far as reliance upon the existence of a safe period is individually employed as a contraceptive practice.

With regard to the duration of the period over which seminal fluid retains its fertilizing power within the body of the female, it has been frequently stated in the past that human spermatozoa may survive for several weeks. Till recently, this statement has been current in many medical text-books. It rests solely upon anecdotal evidence of highly debatable value. It passed without criticism so long as there was no experimental evidence concerning the duration of life of the sperm in related mammals. During the past five years very careful studies have been made by Hammond, Walton and Moore to determine the length of survival of spermatozoa in domestic mammals. The maximum period of survival within the body of the female of the same species in the rabbit, the guinea-pig and the horse lies between twelve and twenty-four hours.

We do not yet know whether these figures are representative of the survival of human spermatozoa within the human body. On the other hand, the earlier estimate varying from three to six weeks must be regarded as most improbable, or at least treated with the gravest suspicion, until there is direct experimental evidence bearing on this point. There is no direct evidence concerning the duration of life

of the unfertilized human ovum. In mammalian species which have been studied from this point of view, a period of two to ten hours may be taken as representing the limit commonly found.

Although it has been asserted that the spermatozoa of the bat survive for some months, there are no observations pointing to the conclusion that the duration of life of the mammalian ovum is of an order of magnitude comparable with the length of the menstrual cycle. As far as human beings are concerned, there is no positive evidence pointing to the existence of a safe period. On the other hand the most recent and critical work on the survival of spermatozoa and ova in other mammals provides strong presumptive evidence in favor of the affirmative view, until such time as evidence from sources other than anecdote has been brought forward to prove the contrary.

As a reliable method of deliberate contraception, the existence of a safe period not only implies that the duration of life of the sperm and the unfertilized egg is comparatively short, but also presupposes that the time of ovulation can be ascertained. Partly owing to a false analogy between the menstrual cycle of primates (men and monkeys) and the estrous ("heat") cycle of the lower mammals, it has been very commonly believed that ovulation occurs in the human species about the time of menstruation. If the first and second assumptions already discussed were established this would imply that the middle of the month is the period in which conception is least likely to occur as the result of intercourse. Teleological bias encourages this belief, because the middle of the month seems to be the period of minimum excitability. The only thing that is reasonably certain is that the prevailing belief in the efficacy of restricting intercourse to the middle week or middle fortnight of the month as a means of avoiding conception is undoubtedly wrong.

The results of recent study point to two conclusions. One is that the time of ovulation varies within wide limits in the human species. The other is that the time at which ovulation is most likely to occur is from the seventh to the thirteenth day. Profound disagreement still remains about the possibility that ovulation occurs before the seventh or after the thirteenth day sufficiently often to preclude the use of the safe period as a contraceptive practice of great reliability. It is generally agreed that the seven days immediately preceding menstruation constitute a period during which the probability of conception is least.

This second conclusion receives powerful confirmation from the recent work of Corner, Zuckerman and others on monkeys. Zuckerman states the salient facts in the following terms:

"All female Old World primates experience approximately four-weekly menstrual cycles. Many of them manifest cyclical changes, vary-

ing in degree, in the color and form of the external pudendal organs and the skin adjacent to them, an area known as the 'sexual skin.' These changes are shown, for instance, by the Chimpanzee, Orang, *Cercopithecus talapoin*, Macaca, and all the species of the genera *Papio* and *Mandrillus*. The sexual skin becomes active immediately after the middle of the cycle. Shortly after the middle of the cycle the sexual skin suddenly resumes its quiescent appearance, in which condition it remains until the onset of the next catamenia, when it again becomes active. . . . Ovulation in the monkey occurs midway between the two menstrual periods. Monkeys, however, do not ovulate every cycle."⁴

Three methods have been chiefly employed to ascertain the time of ovulation in human beings. The first relies on correlating microscopic changes in the uterus and the vaginal secretions, or observations on the contractions of the uterus in human beings with characteristic histological or physiological events in the menstrual cycle of monkeys. In the latter, the time of ovulation can be determined directly, and is known to vary within very narrow limits. Evidence from this source has led to conflicting conclusions concerning the extent of variation in human beings, and its value is somewhat dubious for a reason disclosed in the last sentence cited from Zuckerman's paper.

A second method is based upon personal enquiries into alleged cases of conception following isolated coitus. These are very carefully surveyed in a recent paper (1927) by Dickinson of New York, who concludes his survey of evidence from this source in the following terms:

"There is general agreement on five matters: (1) Conception can occur at any part of the month. (2) There is very marked difference between favorable and unfavorable periods. (3) The week or ten days following menstruation is the time of greatest likelihood of conception. (4) The week preceding menstruation presents the least likely chance of conception, averaging about 7 per cent., or in various lists, 3, 6, 9, 9, 3, 10 per cent. (5) Conception during menstruation is relatively frequent, about 13 per cent."⁵

⁴ *The Menstrual Cycle of Primates*, Part I, Proc. Zoo. Soc., 1930.

⁵ *The "Safe Period" as a Birth Control Measure.*

Being based on personal testimony, the second method cannot be taken as a trustworthy indication of the absolute frequency of conception at different stages of the menstrual cycle. At best it can only be regarded as an indication of relative frequency. As far as it goes, it supports the conclusion that ovulation is most likely to take place towards the middle of the inter-menstrual period, when it occurs in monkeys. The range of variation and frequency of exceptions to such a rule must remain an open question in the absence of evidence from other sources.

A third method available for ascertaining the time of ovulation in the human species depends upon the fact that the liberation of an ovum in the mammal is followed by the development of the glandular structure known as the *corpus luteum* which is formed from the follicle of the ovum. Evans and Swezy⁶ (1931) in a recent paper discuss the observations which have been made on ovaries removed or examined during operative procedure. The evidence from this source does not permit us to draw any certain conclusions. As an illustration of the neglect of research in the physiology of human reproduction, it may be pointed out in this connection that there exist both direct means and a variety of indirect methods for settling the limits of variation of the time of ovulation in the human subject. An enormous mass of data for applying the third method could be collected in a very short time if a concerted effort were made to ascertain, where possible, the date of the last menstrual period in all cases of autopsies on the female subject. By pooling information from all the hospitals of this country sufficient material could be obtained in a few months. An indirect approach to the problem which demands more extensive application is a correlation of the biochemical changes of the menstrual cycle with changes in the composition of the blood at the time of

ovulation in other animals. If we accept the present presumptive evidence from the study of other animals to support the conclusion that the possibility of conception in any given individual is limited to a small fraction of the menstrual cycle, it is evident that changes in the frequency of sexual intercourse may exert a very appreciable statistical effect upon the birth rate.

It has been pointed out by Hogben that there are reasons for believing that changes in social hygiene, such as have been introduced during the period of the declining birth rate, may have tended to diminish the frequency of sexual intercourse. The recognition that ovulation occurs most frequently in the inter-menstrual period increases the cogency of this contention. A statistical study by Katherine Bement Davis⁷ shows a very striking minimum of sexual desire during the inter-menstrual period. Maximum excitability occurs immediately before and after menstruation. Two new factors which would tend to promote greater frequency of sexual intercourse in what we may now assume to be the "safe" period, if indeed a safe period exists, have both come into operation during the period of the decline of the European birth rate. One of these is the increasing disposition among married couples to adopt separate sleeping arrangements. The other is the birth of the feminist movement. In its initial stages feminism was identified with a revolt against the sexual demands of the male partner and a puritanical exaltation of abstinence. With the growth of a more enlightened attitude to sex, this has given place to a recognition of the sexual needs of both partners and the attempt to adjust them in such a way as to secure maximum satisfaction to both. It can hardly be doubted that this attitude, reinforced by the factor of additional privacy which operates today in so many marriages, must reduce the frequency of sexual intercourse at

⁶ *Ovulation in Primates*, American Journal of Physiology, 1931.

⁷ *Periodicity of Sex Desire*, American Journal of Obstetrics and Gynecology, 1920.

the time when conception is most likely to occur, even if the net frequency of sexual intercourse remains unchanged.

Many writers on the declining birth rate have given the impression that increased use of contraception is an adequate explanation of all the facts. But something more than this is needed to explain all the facts of the case. No new contraceptive device heralded the decline of fertility. Devices of one kind or another for preventing conception have been known and used since the dawn of history. The nineteenth century witnessed the growth of a social pattern which encouraged the improvement of already known contraceptive devices and their widespread use. Further research alone can show whether agencies other than deliberate contraception are of major importance in limiting human fertility. In the meantime we may take it for granted that contraception is widely used to maintain fertility at its present low level. Perhaps the most significant aspect of the spread of contraception is the prospect of further decline in fertility. If no effective desire for children exists, the limit to which fertility can fall is determined by the efficacy of contraceptive methods. In the present state of knowledge this limit, while probably well below present fertility, is by no means negligible. Improvement in contraceptive technique would therefore bring a completely successful birth strike nearer realization.

It is difficult to estimate the strength of the desire for children in our present social pattern because two contradictory points of view underlie current thinking. One is that most normal human beings desire children and are only prevented from having them by easily recognised economic or other obstacles. All that we know with certainty is that desire for children was colored by the strong emotions associated with sex, as long as reproduction was generally held to be the normal consequence of sexual intercourse. The opposite view, implicitly held though rarely stated by

those who lay stress on the rôle of contraception in bringing about the decline in fertility, is that no great desire for children exists, so that once the means for avoiding reproduction are available few people will have them. The second view is more in accordance with present as the first is more in accordance with past experience. Probably the truth lies between the two. In the majority of people the impulse to have children is one which is very easily affected by social environment so that when, as at present, the social environment favors sterility, the birth rate can fall to a very low ebb. Possibly there will always be a few people who are either unresponsive to their social environment or so greatly desirous of children that they can ignore social tradition. It is doubtful whether they will ever be sufficiently numerous to affect the size of the population appreciably. As it concerns the majority the pressing problem is to analyse the social agencies which encourage infertility and to discover how they can be changed.

The Ideology of Sterility

The rise of highly competitive industrial civilizations has created a social ideology in which children are regarded as a burden. Social promotion largely depends on sterility and parenthood is penalised at all social levels. In the changing social picture two significant and closely related features emerge. These are the altered character of marriage and the emancipation of women. The latter has provided women with worthwhile occupations alternative to bearing and raising of children. The issue is not yet clear cut. In many countries a satisfactory sexual life for women is still difficult outside marriage which is still an obstacle to many careers. On the whole the tendency is for these limitations to be removed, but until this has been completely accomplished it will not be possible to see how far an effective desire for reproduction as a whole or part time activity exists.

What desire for children exists at

present is frustrated in another direction, because there are fewer men who are willing to undertake the burden of making economic provision for a large family. The patriarchal family, in which the wife cared for the children while the father provided their means of subsistence, worked as long as each partner accepted his or her respective rôle. While the attitude of women to motherhood may be somewhat obscure, it is quite safe to say that once the vast majority of men realise that they need no longer reduce their effective incomes to a small fraction by undertaking parenthood, they avoid doing so as far as they possibly can.

Marriage has thus come to mean the association of two individuals for companionship and sexual gratification, lasting only as long as it suits both parties. In such an arrangement children are at best incidental and most generally a hindrance to its satisfactory working. Although it is often possible to accommodate one or two children in the modern home, one or two children are not sufficient to maintain population. In the United States at the present moment about 30% of all women remain childless all their lives. With the opening-up of fresh spheres of activity for women the percentage is not likely to diminish. In order to maintain a stationary population women who do have children would therefore have to have on the average about three and a half children and this would involve a very large number of four and five child families. Large families conflict so much with modern ideals of personal fulfillment that they are rapidly ceasing to exist. While many alternatives to the old fashioned home might be devised, any effective remedy for the present trend of fertility would involve drastic alterations in our present economic system. Of itself economic planning will be fruitless unless it takes into account the way in which changed sexual relationships have affected reproduction.

The patriarchal family pattern associated social prestige with the maintenance of a home and family. It is often forgotten that its rigid economic framework afforded a considerable degree of latitude in personal relations. This was effected by the separation of the two spheres of life, the outside world of work and the home. While only heterosexual physical relations were sanctioned, homosexual social relations could be freely enjoyed through the medium of club life, and business associations. The existence of two distinct spheres of activity accommodated a diversity of psychological types. For example, a dominant woman, though economically dependent on her husband, could exercise a good deal of power and authority in the home. Nineteenth century literature suggests that this happened frequently. Various types of psycho-sexual relations between husband and wife were possible, within the family pattern, but none were necessarily incompatible with reproduction.

One aspect of recent changes in the institution of marriage is that the emancipation of women has gradually led men to seek for both homosexual and heterosexual gratification from one person, using the terms in their psychological sense. The ideal modern equalitarian marriage in which work and play are shared is emotionally absorbing and leaves little time for raising a family. Social prestige no longer attaches to reproduction either for men or women. If he has many children, the dominant male is made to feel inferior within his own social class, while the effeminate male who might be happier in the psychological rôle of wife to the mother of his children is usually unsuccessful as a bread-winner. In women of the middle classes, prestige attaches almost exclusively to those who pursue a career outside the home. In all social classes including those where social prestige is not associated with work, a great deal attaches to freedom in leisure and to the standard of life attained. In both these respects parents suffer. In addi-

tion, the woman who devotes her whole time to motherhood now feels her economic subjection more keenly in comparison with the independence so easily attained by women who remain infertile.

In many respects the change in sexual tradition has resulted in greater freedom of personal relations but this freedom has been attained by excluding children from the sexual and emotional life of adults. Only a few aspects of the sex relation have been touched upon but analogous considerations would be found to apply to many others. For example the patriarchal family pattern allowed men a combination of variety and monogamy which was quite compatible with reproduction. To-day both sexes demand the right to variety. They often combine it with marriage, but the attempt to combine variety, a permanent marriage relationship, and a large family, almost invariably ends in disaster. The reason for this is not so much that incidental promiscuity imperils the family relationship but that the self denial involved in raising a family conflicts with the whole-hearted pursuit of freedom by both sexes.

It seems unlikely that the path of duty is a sure means of arriving at a stable population, and at present it is difficult to see a solution of the problem if sexual gratification is divorced from parenthood. The patriarchal family was stable in so far as it attached a label of inferiority to women as a sex, carrying with it many handicaps. The maintenance of this pattern of social relationships was assured by economic scarcity and international insecurity. Where, as in Germany, national mentality is strongly colored by these two considerations, there is a reaction in favor of the former state of affairs. It is perhaps too soon to say that the reversion is failing to bring about any rise in fertility but it may be doubted whether a successful return to an outmoded pattern will prove acceptable in the long run. If the equalitarian marriage is also destined to failure, there

would seem to be one remaining possibility. The bearing of children has more significance in the emotional life of women than in that of men. Emotional reunion of reproduction and sex might be more readily achieved if women became the completely dominant sex in the field of personal relationships. In a world in which science has abolished the necessity of scarcity, it is less difficult to conceive this possibility.

Enid Charles, *The Twilight of Parenthood*; L. I. Dublin (editor), *Population Problems in the United States and Canada*, (1926); Kuczynski, *The Balance of Births and Deaths*; Lorimer and Osborn, *Dynamics of Population*; H. M. Parshley, *The Science of Human Reproduction* (1933); Raymond Pearl, *The Biology of Population Growth* (1925); Thompson and Whelpton, *Population Trends in the United States*.

E. C.

PORNOGRAPHUS (πορνογράφος).

The *pornographi* were those ancient Greek painters who affected the courtesan as a portrait subject.

See Athenaeus, Dindorf edition, 567B. Athenaeus cites as examples Pausanias, Aristides, and Niophanes.

PREVENCEPTION OR BIRTH CONTROL. The term birth control has become a part of our language and it would be impossible, even if it were desirable, to displace it. But it is not a good term; first, because it is not the births that we wish to control but the conception; we can control births by abortion too, and thus—the second objection to the term—some people ignorantly or deliberately continue to confuse birth control with abortion. To avoid misunderstanding we are often obliged to say: birth control by the prevention of conception. For these reasons there has been coined the word prevenception, which can not possibly give rise to any confusion or misconception. Prevenception means exactly what the two words mean from which it is formed: *prevention of conception*. Prevenception is preferable to the term contraception.

W. J. R.

PRIAPEIA. A collection of poems to Priapus, by various authors of antiquity.

Bähr's *Geschichte der römischen Literatur*, 3rd. ed., i, pp. 504ff. Priapeia was also the name of a town of Mysia, on the Hellespont, and of an island near Ephesus.

PRIAPUS. The god of gardens, vineyards, agriculture, etc., and who hence came to be the embodiment of the principle of fecundity, of the generative or fructifying force in nature. His rites originated in Lampsacus, and grew up at a late rather than an early period; from there, they were disseminated over Greece. A varying parentage has been ascribed to the divinity. Some would make him out to have been the son of Venus and Adonis, while others give Mercury and Chione as his begetters.

The principal attribute of Priapus was his large virile organ. His statue, employed as a boundary-mark in gardens, was commonly of red-painted wood, and the god was armed with a club or garden-knife. He was known also to the Romans (see the Roman writer on agriculture, Columella, x, 108; for the poet-mythologizers, see Horace, *Sermones*, i, 8, 2; Virgil's *Georgics*, iv, 11; Ovid's *Metamorphoses*, ix, 347).

By transference, the word, Priapus, came to signify the virile member itself. Drinking vessels were sometimes made in this shape (Juvenal, ii, 95), or cakes were fashioned in the form of Priapi (Martial, xiv, 69; Petronius, 60).

By still further extension, the word came to mean a lewd or lecherous individual (cf. Catullus, xlvii, 4). The Greeks coined an adjective, *priapodes*, "like Priapus," or "lewd," and a noun, *priapismos*, "lewdness," or "priapism," a term equivalent to satyriasis, etc. Priapus gave his name to a city in the Troad, which was a center of his worship (Thucydides, viii, 107).

By the Greek poets (cf. Mosehus, iii, 27), Priapus was sometimes pluralized in the manner of the Erotes, the Priapi thus taking their place with the satyrs.

At Rome, he was also worshiped under the name of Mutinus, Mutunus or Tutunus. A number of poems in his honor, by various hands, have come down to us from antiquity; this collection is known as the *Priapeia*.

The Priapic cult, as above indicated, is of Asiatic origin, and has in it the elements of religious prostitution. According to the Christian Fathers, Augustine (*De civitate Dei*, iv, 11), Lactantius (i, 20), and Arnobius (iv, 131 and 133), Priapus was associated, at least figuratively and possibly upon occasion in actuality, with the deflowering of virgin brides. Sterile matrons likewise had recourse to the god, by way of procuring the gift of fecundity—an attribute which will be found transferred to certain medieval saints, who in the popular imagination in reality represented a re-incarnation of the pagan divinity.

The obscene character of Priapus is bespoken by the fact that his statues, which were not numerous, were hidden away in pavilions or by groves, as if to keep the profane at a distance. At Rome, Mutunus, who was Priapus under another name, had a chapel in that upper and remote portion of the Palatine hill, known as Velia. This chapel was abolished by Augustus, but it was impossible to uproot the superstition. Priapic images were still to be found in the fields about Rome, and to them came brides and sterile women from all parts of the peninsula. Some scholars in the past have endeavored to make out, as well, a Tutuna, or Mutuna, as the god's wife, who was there to preside over the mysteries, but who, considerably, did not see the women seated upon her husband's lap. This, however, is not unlikely due to a confusion with another deity, Pertunda.

The Priapic tradition is to be met with, in France, as late as the time of the French Revolution, in the devotion paid to St. Guignolet. A relation has also been seen to St. Prix (Projectus, as a corruption of Priapus).

S. P.

PRIMA. Roman Goddess of the wedding night, assisting the bride as

[PREVENTION OF VENEREAL DISEASE IN THE ENGLISH ARMY]. After the outbreak of the War in 1914, it soon became abundantly clear to the medical officers that severe losses were being inflicted on the health and efficiency of the Armies by the invasion of venereal microbes. These losses they were powerless to reduce: (1) because they were not permitted to state their nature and extent for fear of shocking the public, and being uninformed the public naturally took no notice of the venereal problem; (2) because the medical officers were not permitted to teach chemical prevention or self-disinfection, for fear of making vice safe, and thus shocking the moralists; and (3) because the medical officers were without supplies of disinfectants in suitable form to be issued to the soldiers, and the War Office could not authorize their issue for fear of upsetting the politicians who were largely under the domination of ecclesiastics and other moralists.

Also, among the medical officers themselves, there was an honest and genuine conflict of opinion as to whether it was better to establish disinfecting depots to which soldiers could report for efficient preventive-treatment or whether it was better to issue them with sanitary packets to be applied more or less efficiently by themselves. This difference of opinion was seized upon by moralists, who were opposed to all forms of disinfection, to set up the pretence that disinfectants were unreliable and that to provide disinfectants beforehand was ethically indefensible.

It is only fair to say that the Nonconformists and the Anglicans made far more difficulties for the medical officers than did the Catholics. In fact, the following quotation from a ruling by the Professor of Moral Theology at the Gregorian University, Rome (from *De Castitate* by The Rev. A. Vermeersch, S.J., 1921; *Dublin Review*, Jan.-Mar., 1922), shows that the hopelessness of relying wholly on moral prevention was definitely accepted:

"You ask: 1. Whether or not it is formally sinful to use antiseptic ointment before illicit intercourse.

2. Whether or not the use of such ointment may be advocated.

3. Whether or not it is lawful for chemists to sell it.

Ad. 1. Although it seems that in England (cf. *Times*, Jan., 1917) some have made a scrupulous distinction between the use of this ointment before and after, and have forbidden the former while approving the latter, you need make no distinction. It is not wrong to seek means, indifferent in themselves, which will prevent the evil consequences of sin.

Ad. 2. It would indeed be a sin to reveal such drugs, or to persuade their use, with the intention to induce a man to commit sin; but there is no harm in telling a man who is certainly going to sin how to avoid the consequences.

Ad. 3. If men could be restrained from vice by prohibiting the sales, this should be done; but so many are ready to expose themselves to danger that you cannot hope for such a result from forbidding the sale. It is true that this removes fear, but the general good, and the removal of danger to the innocent, justifies this. Besides, it is a poor virtue which is kept from sin only by the fear of disease. You may add that this remedy can also be used by married persons, in order that they may make honest application of it." (The use of the ointment for Birth Control purposes was not considered to be an honest purpose.)

That is a very clear and sensible statement of the ethics of medical prevention, a statement which every one, irrespective of religious or irreligious views, could reasonably be asked to accept, even in peace time; in war-time, when the disablement of soldiers on active service was doubly serious, one would think there should have been no time wasted in adopting medical prevention. But such was not the case. Month after month and even year after year went by, and the troops were left unprotected.

Towards the end of 1916 the dians were supplied with calomel ~~salves~~, in 1917 prophylactic packets were issued to the Australians and New Zealanders, and not till March, 1918, did the War Office provide similar protection for the English troops. In the meantime the British Armies had been maintaining an average of between 40,000 and 50,000 soldiers always out of action owing to venereal disease, that is, owing to an infection which we knew how to *pre-*

vent, and on the average each infected soldier was out of action for six weeks: thus 50,000 patients really meant about four or five hundred thousand infectious cases needing treatment every year.

Admittedly, war-time infections are of a special nature. War lets loose all the passions of mankind including the sexual passions. Millions of men are taken away from their homes and thrown into contact with foreign women and strangers; millions of women are freed from the social and moral restraints of ordinary quiet home life or working life; everybody becomes nervously excited, physically elated, sexually awakened, or otherwise disturbed in mind and body and habit; alcohol flows much more freely through the veins of the nation; leave-men are here to-day and gone tomorrow—gratifying them may be a case of now-or-never; and for the time being there is money—not only for the soldiers abroad but for the people at home in quite unexpected and unusual amounts for day work and above all for night work; and in addition there are irregular hours, and movements of masses of young adults suddenly released from social controls and making wild dashes for freedom and what they regard as Life.

Everywhere, mingled haphazard, we had pride and profiteering, greed and grief, heroism and hysteria, love, marriage, divorce, the world, the flesh, the devil—AND WAR: its clamor, its madness, its suffering, its interest and enjoyment, its cruelty and brutality; its tragic bereavements; its rapturous love unions; its devastating disloyalties and its marvelous faithfulnesses; its insane perversities, its crazy wastefulness, its absurd economies; its daft devotion and its diabolical endurance; and above all its supreme imbecility—the delusion that men of peace can be suddenly turned into men of war without changing their mental, moral and sexual standards.

All these things did not, of course, create the venereal diseases; these diseases were in our midst long before the

War. But the War conditions did undoubtedly, and must always, accelerate the spread of venereal diseases and vastly extend their social area. Whole classes of men and still larger classes of women who before the War were immune from irregular and casual sexual intercourse began to engage in this—at first more or less secretly, afterwards more or less openly; and every year the War continued made the problem deeper and vaster and more widespread, until at last in 1918 its importance and urgency could no longer be denied.

Then those of us who had been preaching and teaching prophylaxis were able to make some headway, not as much as we desired, but far more than we had dared to hope in many cases. We were able to state that the Venereal Diseases were the most easy and economical to prevent but the most difficult and expensive to cure. We had found out, definitely proved, that the microbes could not pass through a film of ointment; therefore that if the parts exposed to contact were anointed with calomel ointment or any disinfecting ointment or even any grease or vaseline, and afterwards washed with soap and water it was very unlikely that disease would follow.

We were also able to teach that if these preliminary protections had not been applied, the speedy application of any suitable disinfecting lotion—e.g., potassium permanganate, quite weak—eliminated almost every chance of disease. We were able to teach a man that if he had exposed himself to infection, and had no disinfectants, he could nevertheless urinate and thus rinse out the pipe (urethra) and cleanse himself with his own waste-water. We were able to tell some women that if they used suppositories, or annointed themselves with ointments beforehand, or urinated or douched afterwards, they greatly lessened their chance of infection.

We were able to tell the soldiers that syphilis might be contracted on various parts of the body, such as lips, abdo-

men, genitals; that gonorrhea was a disease mainly taking its hold in the tubes—the urethra or waste-pipe from the bladder of man and of woman, and the Fallopian tubes of woman, and that if the external orifices of these tubes were blocked with a little blob of grease the microbes could be kept out; that for a short time after contact, the microbes were on the outside parts, and could be washed away or killed; and that the venereal diseases were just dirt diseases, the result of being unclean, and not the necessary result of being immoral. Many men were immoral and did not become diseased; luck protected them; but sensible men should not chance their luck, because they did not want to take any chance whatsoever of becoming syphilitic and conveying syphilis to their sweethearts and wives and children.

Had there been enough instructors, and enough disinfectants available, and enough confidence in medical prevention—and above all had we been free from the interference of those who desired to prevent the prevention of disease: who objected to prophylaxis on the ground that it enabled the soldiers to be immoral without suffering for it: who really were not concerned to stop disease but to secure the poisoning of sinners:—we could have practically extirpated the venereal diseases from the Army (barring, of course, the wilful infections contracted by war-worn soldiers for the purpose of escaping from the Front Line). As it was, we were haulted and hampered continually even during the 1918 shortage of men, and when the Armistice came the pseudo-moralists again snatched control, and instead of sexual disease being fought more strenuously than ever, because of the approaching return of the war-survivors to their homes, there was less prevention work done, and in the Rhineland and elsewhere we had a vast increase in the number of infections.

Briefly, however, our war experience did most definitely prove this:

1. That disinfectants can be applied to the male and female genital organs (and otherwise) in such a way as to protect them from disease.

2. That the average man and the average woman risking infection can be taught how to apply these disinfectants, and can be relied upon when properly taught to protect themselves.

3. That some men and some women are innately loose and irresponsible and need to be protected in spite of themselves; or failing that, treated in hospital.

4. That alcohol increases sexual desire, lessens sexual ability and therefore extends the duration of a dangerous contact, and decreases moral responsibility; and therefore men determined to engage in irregular intercourse should refrain from liquor.

5. That syphilis and gonorrhea can both be medically prevented simply, cheaply, and comfortably, but that their cure is not simple, not cheap, not comfortable; and that there is a growing body of authoritative medical opinion to show that the alleged certainty of the cure of the venereal diseases is open to question.

6. That millions of pounds were wasted in treating diseased soldiers who were afterwards discharged as "cured," but who nevertheless proved capable of conveying disease to their wives and other members of the civil community; and that the public is being asked to provide needlessly huge sums of money for Venereal Clinics, because much of this expenditure would not arise if there was definite and authoritative public teaching of the simple facts of medical prevention.

7. That the belief that teaching medical prevention will increase irregular intercourse is a delusion: as a fact, it is impossible to teach prophylaxis without at the same time arousing a greater sense of moral responsibility in the mind of the individual: it is not irregularity but constancy that is inculcated when the mind becomes enlightened as to the prevalence and danger of venereal dis-

ease, and constancy—the faithfulness of one man to one woman—is now and will always remain the greatest of all checks on the spread of sexual disease.

8. That in any case the attempt to prevent the spread of the venereal diseases by moral teaching alone proved such a hopeless failure that the nation was compelled to fall back on medical prevention, and it was only when medical prevention was applied that the number of infections was reduced: moral suasion had practically no effect at all by itself.

The writer cannot close this paper without referring to one of the most damaging Acts that has ever disgraced the Statute Books of any civilized community, namely, the *Venereal Diseases Act, 1917*, passed by the English Parliament. This Act definitely prohibits chemists from selling venereal disease preventives as such. It was rightly designed to prevent the sale of quack remedies for diseases needing skilled treatment—to prohibit the sale of medicaments for the cure of venereal diseases, and then some sly wicked hand put in the words “*or prevention*” and they slipped through. Chemists, of course, may sell calomel ointment, but they must not explain that calomel ointment prevents syphilis, nor tell the customer how to apply it for this purpose; they may sell such simple disinfecting lotions as potassium permanganate, but they must not explain that swabbing the genitals or syringing the tubes will kill any microbes that may happen to have penetrated there. If any chemist in England does sell a useful venereal preventive with any written directions, he is not only liable to a heavy fine but also to a term of several years’ imprisonment with hard labor.

It is true that the Act says that the Ministry of Health may authorize certain disinfectants and suitable directions for their use as preventives of sexual disease, but the Ministry of Health has so far refused, time after time, to exercise this authority. The Chief Medical Officer for the Ministry of Health stated

some time ago that: “The evidence of chemists in the town is that there is no demand for disinfectants for this purpose.”

So first in Great Britain we prohibit the chemists by law from selling venereal preventives and then we say there is no demand for such preventives, and at the very same time these venereal preventive packets are being issued in our Army and in the Navy by national authority. In the Army and in the Navy, men are not only taught medical prevention—prophylaxis is imposed on them as a moral responsibility; they are provided with medical preventives and printed instructions in many cases as well; but if men remain civilians there are no printed directions for them and no venereal prophylactics purchasable as such, and no teaching readily available at all. They are deprived of the knowledges and the means of prevention, but if they become diseased they can be treated *free* at the venereal clinics at the expense of the general community.

But there is nothing compulsory about this. If a man is suffering from the worst of all contagious diseases, syphilis and gonorrhea, which he may spread to others merely by touch—that is, by contact of suitable areas of the body for the development of more microbes—he is under no legal obligation to remedy his condition and under no penalty if he poisons other members of the community. If he attends the Free Clinics and does not like them, he can discontinue going if he wishes; many patients do come and get half-cured—not even that perhaps—and then drop away into the blue, thus wasting their own time, wasting the doctor’s time, and wasting the country’s money.

More than half the Venereal Clinic patients thus disappear every year after partial treatment; there are about 200 Clinics and they cost at least half-a-million pounds per annum. “Is the country getting a return in reduced prevalence of Venereal Disease, or in decreased virulence of the infection, commensurate with the cost?” asked one Medical Officer recently; and his reply was: “There is a growing volume of opinion to the contrary.”

Then why do we continue thus to mismanage the whole venereal problem? We do so because of our muddled thinking about sexuality, because, as we say, we are afraid of

making vice safe. Therefore, let us examine this proposition, and ask ourselves this question: Why should vice be kept dangerous? The pious notion is that then there will be less of it. But the fear of disease has really very little deterrent effect, and in any case that fear has been destroyed very largely by the establishment of the Free Clinics.

When men are indulging in casual intercourse with strangers whom they pick up in the streets or in public houses, they are either sexually excited or alcoholically excited, and therefore not controlled by a responsible fear of the consequences of their actions. If they were sober and quiet and sane they would not risk their health and happiness for the sake of a passing gratification. But suppose they do sit still and think for a moment. Then if at the back of their minds they know that no matter what infection they pick up, skilled treatment is available free in the Clinics, that knowledge will not act as a check. How, then, can the people who are providing free treatment for developed disease object, on moral grounds, to the provision of free instruction for the prevention of undeveloped disease? Even if this moral argument were sound—that we should not make vice safe—those who are using it have already disarmed themselves by providing free treatment.

But the moral argument is not sound. The world will not be rendered either more or less moral by the abolition of venereal disease. Because people are sexually immoral is no reason why they should acquire syphilis and gonorrhea. It is idle to say: "serves them right, they deserve all they get." They do not deserve all they get, the punishment does not fit the crime, and innocent people may suffer, and do suffer. If the punishment theory is to be enforced logically, then treatment should be refused to the sinners—let them become diseased, disabled, let them die. The pseudo-moralists shrink from this logical outcome. They try to compromise. But there is no logical half-way-house. If we decide to extirpate sexual disease, all efficient methods of doing so are right and proper and just. If early treatment is morally justifiable, then earlier treatment is also morally justifiable: inasmuch as it will save more innocent women and children it is more moral than later treatment.

The truly immoral people in this community are those who are trying to prevent the medical prevention of diseases which are devastating the health and happiness of the nation. The evil that one vicious man does is nothing at all compared with the evil done by organized bodies of virtuous men and women banded together, not for the purpose of promoting Sexual Hygiene, as they claim, but actually for the purpose (1) of maintaining the dangerous nature of irregular intercourse, and

(2) of maintaining their own position and power as "moralists."

By suppressing the knowledge of sexual sanitation and prohibiting the sale of sanitary packets, not less but more disease results. If the parents are syphilitic, the child may be born syphilitic—maimed, crippled, disfigured, blinded, damaged in all sorts of ways; and the mother may be subjected to a series of miscarriages, abortions, stillbirths. As to gonorrhea, we know that more than half the women who go on the operating table for internal operations do so as a result of gonorrheal infection which has spread its devastation through their vital organs. We know that more involuntary childless and one-child marriages are caused by gonorrhea than by any other single cause. We know that the invasion of the genital organs of a woman by gonococci may result in the tubes leading from the womb to the ovaries becoming inflamed, stopped up, filled with pus; that the tube forming the outlet of the bladder may be similarly affected; and that very many decent married women thus become chronic invalids and life-long sufferers through recurrent infection by their husbands.

We do not want more Sunshine Homes for blind babies, but fewer babies for Sunshine Homes. We know that the babies may be clean-eyed in the mothers' wombs but infected in transit down the birth canal, and that their eyes can be saved if a disinfecting lotion is applied to the eyes of every newborn infant. The very people who say this with one breath, with the next are explaining that prophylactics are unreliable. Prophylactics are simply disinfectants and a disinfectant is something that disinfects, and it does that on the eyes of an innocent babe or the genitals of a guilty adult. It will not do to say that disinfectants are so reliable for babies that they would stamp out eye-trouble, and at the same time so unreliable for adults that they would promote a false confidence and therefore spread disease.

What are the natural limitations of sexual intercourse for developed responsible human beings? Surely, Nature herself is working out this limitation by developing an intense fastidious selectiveness, such a high degree of selection that the normal, healthy, thoughtful adult has no desire for intercourse in the absence of romantic love, when living under normal peaceful conditions.

War comes along and upsets normal life, parts lovers and sweethearts and husbands and wives: normal relationship is no longer available; hence ab-

normal or subnormal sexual relations arise, there is a reversion to brute promiscuity; and the horrible harvest has to be reaped long after the war is over. As long as there is War, our standards of sexual health, sexual cleanliness, sexual honor, and sexual virtue will be brought to the level of an anti-social pro-jungle code. And the prime lesson that War teaches us in the field of the venereal diseases is that the best way to prevent these diseases is to stop them before they begin.

E. R.

PROSTATE GLAND. The prostate gland is an organ concerned with man's sexual life, and which, when there is dysfunction, assumes a gravity usually out of all proportion to the condition of that structure. On account of the abnormal life which most men lead in this country, the prostate is prone to become congested and chronically inflamed, which is followed by disorders of a very definite and disagreeable character to the patient suffering from such dysfunction.

Anatomy. The gland begins to develop at the third intra-uterine month from five different foci. Through the development of these outbuddings from the posterior urethra, develop the five lobes of the prostate, including two lateral lobes, a middle lobe, anterior lobe and posterior lobe. In addition there is an accessory organ called the subcervical group of tubules, first described by Albarran, which develop from the mucous membrane on the floor of the posterior urethra and extend backward and upward under the floor of the vesical orifice. Like all sex glands the prostate grows most rapidly at the time of puberty, at which time the tubules are seen to be full of secretion, widely distended and actively secreting, except the anterior lobe tubules which at the time of birth shrink into insignificance in almost every instance.

During the active sexual life of the male, the two lateral lobes increase in

size and importance, as does the middle lobe. The posterior lobe tubules are also active. As the person's age advances, the prostate does one of two things. It either atrophies or enlarges from one of the following causes: adenomatous hypertrophy of the prostate, carcinoma of the prostate or sarcoma of the prostate. Fortunately, however, the average case atrophies somewhat from disuse, although it secretes fluid until the patient dies.

Physiology. The function of the prostate gland is to secrete a fluid which activates spermatozoa. This function of the prostate was proved very conclusively by George-Walker (Baltimore), who excised the prostate glands of rats with the results that males thus treated were rendered sterile in most instances. In addition, the prostate has an internal secretion which has been proved by D. I. Macht (Baltimore), and his associates. The fluid expressed by the prostate in health and vigor is a milky substance with a characteristic odor. Examined microscopically the fluid is seen to contain many homogeneous bodies, circular in appearance and varying in size. These are lecithin bodies and are common in health. There are also occasional leukocytes, some epithelial cells, usually degenerated. These were described by Waldeyer and he called them compound granular cells. Occasionally one may see corpora amylacea, which are lamellated, and under the microscope appear like an onion cut across. Very often spermatozoa will be seen and if the fluid is warm and the secretion normal, these will be actively motile.

Diseases. The most common infection in acute inflammation of the prostate is caused by the gonococcus. However, experience has taught us that out of all of the hundreds who have this disease, comparatively few have an involvement of the prostate gland. This is probably due to the protection afforded the prostatic tubules by their sphincter-like orifices. When infected

with the neisserian organism, the prostate is usually very much swollen, tender, and even hot to the palpating finger. The small areas of infection will sometimes be confluent and large abscesses may occur which are relieved only by operative intervention. The average case, however, will subside upon the application of hot rectal douches, diathermy, or other similar palliative means.

Syphilis very rarely attacks the prostate gland. The occasional cases that have been reported are most unusual and have responded to the treatment of the general disease.

Tuberculosis of the prostate is in most instances secondary to tuberculosis of the epididymis, or of the upper urinary tract. When present it is recognized by irregular masses in the prostate gland which are not board-like in rigidity, and which are comparatively painless to palpation. Very often if one epididymis only is affected with tuberculosis, that same side of the prostate will be the only part affected. The lesion, of course, is accompanied by tuberculosis of the seminal vesicle on that side. One avoids operation upon tuberculosis of the prostate whenever possible, due to the fact that such an operative procedure is liable to be followed by a persistent discharging fistula.

Other Infections of the Prostate. In a careful study made by the author at Bellevue Hospital, where cultures were taken by stripping the prostate and securing the fluid through a sterile endoscopic tube, also cultures taken directly from the prostate gland at operation, it was found that many organisms were present in the gland. Staphylococcus aureus, Staphylococcus albus, Micrococcus, Colon Bacillus, and many other organisms. Apparently these rarely resulted in acute inflammation requiring operation, but were present for long periods of time in spite of a considerable amount of vigorous treatment.

Chronic congestion of the prostate is a very frequent occurrence in this

country and results in grave dysfunction of the prostate gland. In fact the depression resulting from such prostatic dysfunction is out of all proportion to the gravity of the lesion. The causes of this condition are manifold. It may result as a sequel of gonorrheal prostatitis. A frequent cause is a long period of masturbation during which the patient does not entirely empty the prostate gland leaving it in a state of passive congestion which if repeated frequently and over a long period of time will result in serious disturbance of the physiology of the gland. Sexual excitement without the relief of intercourse is a common practice called "petting" by the modern young, and results in chronic congestion with serious disturbance of the function of the gland.

Another practice among young married couples who do not desire to have children is coitus interruptus. Here, as in masturbation, the prostate gland does not thoroughly empty itself and remains congested after the sexual act for many hours, and again causes distress. One of the most resistant cases of chronic prostatitis ever seen by the author was a young religious worker who was engaged to a lady for a period of eleven years. During this time they never had sexual intercourse, although they were frequently in one another's company. When, after this long engagement period, they were able to marry, they were both quite incompetent sexually because of the premature ejaculations suffered by the male. Their inability to cohabit proved to be such a great disappointment, that they were both practically suicidal over it. After a long period of treatment, the gland was reduced to a semblance of normality and finally this couple were able to realize their sexual powers.

Early marriage is to be strongly advised whenever it is at all feasible. Lacking the proper circumstances for matrimony there is only one thing that successfully combats sexual desire,

and that is hard physical exercise. The author had a patient who was a circus athlete, as was also the patient's wife. This couple although particularly strong and very healthy would sometimes go through a whole circus season, sleeping in the same room and often in the same bed without holding intercourse at all, or only occasionally, due to the fact that they became so physically tired every day that sexual expression was eliminated from their lives. During the winter months however, they were a little more active sexually than the average couple.

Stone. Stone in the prostate occurs in about 20% of all cases. The exact etiology of stone is uncertain, but it is undoubtedly true that calculi occur by a deposit of a calcareous material in the corpora amylacea. Usually there are very few symptoms directly traceable to the calculi, although stone in the prostate is accompanied by pus in the fluid expressed. Calculi may be of two types, primary and secondary. The primary stone in the prostate is that type of calculus occurring in the acini of the gland itself, while the secondary calculus occurs in the prostatic portion of the urethra and is not a prostatic calculus at all.

Diagnosis. The diagnosis is made by means of rectal palpation. Sometimes when there are many calculi present a distinct grating may be felt by the palpating finger. Very often however, the prostatic calculi are discovered by means of the x-ray. Often during an operation upon the vesical neck, a nest of calculi may be opened into and these will discharge, as has happened in one case treated by the author recently.

Tumor of the prostate.—There are a number of types of tumors. In a series of over two hundred and fifty prostates examined by the author at routine autopsy, it was found that approximately 25% of all males over thirty years of age had a greater or less enlargement of the subcervical group of tubules at the vesical orifice. In some cases this mass was as large as one's thumb, in others only as large as a small French pea. Occupying,

as this group does, a most strategic position on the floor of the vesical orifice, it is easy to see why so many men have disturbances of urination. In this location a minimum enlargement causes a maximum of distress. In addition, there may be an elevation of the floor of the vesical orifice, due to excess of fibrous tissue, which causes a stricture of the vesical orifice with elevation of the floor in such a manner that considerable urinary distress follows. In some instances neither a subcervical group enlargement nor fibrosis of the vesical orifice will be accompanied by residual urine.

Frequently patients suffering from these conditions will have perfectly clear, normal-looking urine. In spite of these two salient facts the patient may have a frequency which necessitates emptying the bladder every fifteen or twenty minutes, burning pain both in the urethra and in the perineum, and it is entirely possible for the prostatic fluid in such a case to be within normal limits. In former years such a patient frequently went from one doctor to another or one clinic to another and with the positive findings so meagre the patient was put down as a sexual neurasthenic and treated as such instead of being given the proper operative care for such a condition. "Young Punch" operation was formerly the method of choice. This has been replaced by the operation of vesical neck resection, preferably using the excellent rotary device perfected by Thomas J. Kirwin (New York).

Adenomatous hypertrophy of the prostate.—Adenomatous hypertrophy of the prostate occurs in several types distinguished microscopically as follows: The prostatic tubules lined with a single layer of tall cylindrical cells with their nuclei near their bases, occupy most of the gland. Frequently the lumina are so distended and the amount of interstitial tissue so limited that the epithelial cells will be found on membranes which lie back to back, with neither muscular nor connective tissue cells intervening. This process is commonly called bridging and is due to the thinning out process caused by the great distension of the tubules and their branches.

Further extension of this process results in cyst formation. Usually the cysts are small in size but may become confluent and occupy as much as one half of the enlarged prostate. The fibro-glandular type appears when the usual amount of fibrous tissue has been laid down. The fibrous type with more or less compression of the tubular elements is an additional type. Evidences of chronic inflammation will be found surrounding the acini in specimens illustrating any of the types just enumerated.

Sarcoma of the prostate.—This analysis is based on 132 reported cases in which the diagnosis is undisputed. Prostatic sarcoma is common to all ages. 35.59 per cent. of pros-

tatic sarcoma occurs before the age of twenty. Prostatic sarcoma is most frequently associated with an infiltration of the urinary bladder, seminal vesicles, and rectum. Regional extension occurs in 76.51 per cent. of the cases. Extension is most frequently met with in the round cell type, and during the first decade. Metastases are most frequently seen in the round and spindle cell sarcomas. The round cell and the spindle cell are the most malignant types. The kidney is the most frequent site of metastatic implantation. Metastases occur most frequently by way of the lymphatics.

The most favorable results in treatment have been the use of x-ray and radium. Operative intervention should be limited to relief of obstruction and the treatment of complications.

Carcinoma.—Carcinoma (cancer of the prostate) is most frequently a primary growth, but may also be secondary. This disease usually starts in the posterior lobe which is a part of the gland that does not participate in adenomatous hypertrophy. In fact the author has several cases in which carcinoma of the posterior lobe of the prostate began ten or more years after the adenomatous hypertrophy of the prostate had been removed. The types of carcinoma seen in the prostate are medullary, although colloidal and melanotic growths have been reported.

The diagnosis of malignancy of the prostate is made by the palpating finger per rectum. A hard, board-like, unyielding nodule or other mass in the prostate gland will arouse the suspicion of the diagnostician. The diagnosis will be positively determined by removing a piece of the tissue with the author's biopsy device. This consists of a sheath with a everted fenestrum on its lower surface near the distal end. Into this fits a three cornered sharp needle with a fenestrum which coincides with the one already described in the sheath. At the proximal end there is a thumb and forefinger arrangement, like the handle of a pair of scissors. This instrument is introduced through the perineum, with the finger in the rectum as a guide, into the suspected part of the prostate gland. When it has been inserted to the suspected area, the fenestrum is opened by turning the obturator and pressure by the finger in the rectum will force the tissue into the open fenestrum. The obturator is forced out by the handles of the instrument and the tissues penetrating the fenestrum are clipped off. Pieces as long as one and one half centimeters may thus be obtained. This core of tissue is then cut into serial sections and a real knowledge of the existing pathology may be obtained.

Diverticulum.—Prostatic diverticula are rare, usually resulting from obstruction to the orifice of the utriculus prostaticus, which be-

comes enlarged and extends posteriorly to the base of the prostate.

Treatment.

Palliative. In acute prostatitis the most soothing method of procedure is to administer hot rectal douches two or even three times a day. In the average case this will result in the relief of the irritation and swelling, in a few hours or days. In acute prostatitis it is most important to know whether there is residual urine, especially if the patient is having great difficulty in voiding, as is usually the case. While the catheter is in the bladder it is very comforting to irrigate it with hot potassium permanganate solution 1 to 8000, or acriflavine 1 to 8000, or rivanol dextrose 1 to 8000. Very often if hot rectal douches are not available, hot sitz baths will be helpful. This may be done in the ordinary bath tub, by filling it with hot water and then having the patient sit in the hot water for fifteen or twenty minutes night and morning, finishing the bath with a cold spray to close the pores of the skin and prevent catching cold.

In chronic prostatitis various treatments have been recommended. Diathermy, ultra violet light applications per urethram, as recommended by Lowsley and Wang, and various rhythmic electrical currents applied to the prostate by an electrode in the rectum have been recommended and in certain cases are particularly useful. In the average case of chronic prostatitis, however, digital massage is considered a most useful treatment. The fluid obtained from the urethra after massage should be examined under the microscope to determine the amount of pus present as compared with lecithin bodies. If there are an equal number of both present, it is customary to say that the patient has 50% pus in the prostatic fluid. If there are twice as many lecithin bodies as pus, one would say that there was 33% pus present, etc. In addition to the leukocytes seen microscopically, one notes the presence

of degenerated epithelial cells, the compound granular cells of Waldeyer, and the presence of corpora amylacea. The use of a Kollmann dilator passed into the urethra, will, by its expansion when properly adjusted, administer an internal massage to the prostate.

Sounds are useful for the same purpose. Rubber bougies are also helpful. It is well to instill solutions of rivanol dextrose, acriflavine and permanganate into the posterior urethra, in some instances, if there is only a slight amount of pus in the prostatic fluid. But, if there is excessive blood, it is well to fill the bladder and have the patient void, thus irrigating his own prostatic urethra.

An accompaniment of acute and chronic prostatitis is often verumontanitis. This condition is accompanied by a considerable amount of sex disturbance. The verumontanum is the sexual trigger and when it is inflamed, the patient will frequently suffer from night emissions, premature ejaculations, and various other sexual disturbances. Therefore, when a patient complains of such distressful symptoms, endoscopy is indicated. The instrument of choice is the Lowsley urethroscope.

Experience with the open air urethroscope has shown the difficulties encountered in making examinations and in the application of treatment to the urethra for various pathological conditions. This is due to a number of reasons, the chief of which is inadequate vision. This inability to see properly is usually caused by fluid entering the field or bleeding following the passage of the instrument.

The instrument here described consists of a metal sheath 14 centimeters long and 28 French in diameter. It is supplied with an obturator which extends beyond the end of the sheath and facilitates its passage into and through the urethra and into the bladder as desired. The obturator is unique in that the end is composed of two pieces of metal of appropriate shape which may be separated by means of a screw at the proximal end. By expanding the distal end it overfills the beak of the instrument so that in passing it into the urethra there is no possibility of the mucosa becoming scratched or injured in any way. It is supplied with a water cock for the purpose of introducing water for distension.

The telescope is of the McCarthy foroblique system, but differs in this essential point; the lamp is placed beside the objective of the telescope and extends only 5 mm. beyond it. This arrangement gives a more ideal illumination for the urethra than any existing instru-

ment. By changing the position of the lamp, objects lying between the lamp and the objective lens are wonderfully illuminated, a condition which did not exist in the original foroblique and obviously aids in better observation of all the urethral structures. It magnifies two and one half times at one half inch or 12 mm. distance from the object.

The room sacrificed by placing the lamp beside the telescope is compensated for by combining the lamp carrier with an irrigating channel; thus, we have reserved as large a space in the lumen of the tube for operative instruments as we possibly can by any arrangement. With this instrument a thorough inspection of the mucosa of the entire urethra is possible. Ulcerations, congested spots, small abscesses or pathological changes can be readily detected.

It gives one an excellent view of the verumontanum with the orifices of utricles and the ejaculatory ducts. Catheterization of the ducts may be easily carried out. One may outline the ejaculatory ducts, ampullae of the vasa deferentia and even the epididymides by the injection of sodium iodide or some other shadow casting, non-irritating chemical.

Ulcerations, small abscesses or other pathological conditions may be treated by fulguration, with water as a medium, or by the application of silver nitrate on a special flexible holder; or by carbolic acid in an air distended urethra.

It is especially useful in penetrating otherwise impervious strictures of the urethra. Under direct vision, with a water distended urethra, a bougie as large as #10 French may be inserted into the elusive channel and dilatation of a tight stricture is thus accurately and scientifically treated. This eliminates the uncertain and time-consuming method of passing many small bougies into the urethra in the hope that one will ultimately enter the small aperture. In other words, this accurate and direct method succeeds by positive means while the former method succeeded, if at all, by the process of chance.

In the study of congenital valves it has been practically impossible to obtain an accurate view with the old instruments, but with this new device, a perfect picture is seen because one looks forward and obliquely, through the end of the tube, and not through the side. This accurate observation enables one to determine whether such valves are to be treated by simple fulguration, dilatation, or removed with the Kirwin resector.

The vesical orifice is perfectly observed by the use of this instrument because the entire circumference is seen at one time without rotating the instrument. Intrusions are thus quickly and accurately diagnosed. Small intrusions on the posterior wall may be fulgurated, removed by the resectoscope or in the case of large intrusions an open operation

should be employed. If there be lesions present in any part of the lower urinary tract to which massive applications of a cauterizing or soothing solution are indicated, the inner unit may be removed and the necessary treatment applied.

Painful ejaculation is one of the results of infection of the mucous lining of the utriculus prostaticus. This little tube-like structure is the analogue in the male of the female uterus. It is about 1.5 cm. in length, extends from the tip of the verumontanum to its base, but in some instances may extend to the base of the prostate. Its mouth is wide open and it is surprising that it is not involved in every infection of the posterior urethra. The simple tubular glands occurring in its mucous membrane occasionally become infected and when this occurs great distress is noted exactly at the time of ejaculation. This is caused by compression of the ejaculated mass through the ejaculatory ducts as they are contained in the same envelope with the utricle. The condition is easily relieved by injecting antiseptic solutions into the utricle through the Lowsley urethroscope.

By means of this instrument one may observe the true condition of the anatomy of the vesical orifice, the presence of granulations in the posterior urethra and other abnormalities, and the condition of the verumontanum. In case there are abnormalities present, an electrode may be inserted through the instrument and by means of an electric current, cauterize all granular areas or small papillomata or various other pathological conditions may be properly diagnosed and treated. Frequently it is desirable to remove the obturator of this instrument and apply cauterizing agencies, such as 50% carbolic in glycerine. This may then be followed by applications of alcohol on a sponge and then if the patient voids, the excess cauterizing agent will be passed out.

Vaccines in diseases of the prostate have been found particularly useful by some investigators. On the whole, however, vaccines have proved to be

disappointing in the treatment of prostatic conditions. The autogenous vaccine may be prepared by thoroughly irrigating the anterior urethra, passing the Lowsley urethroscope into the posterior urethra, withdrawing the obturator and then by massage the prostatic fluid may be caused to flow out through the instrument or into it, whence it may be removed by sterile applicators and cultures made for an autogenous vaccine.

Organotherapy.

Very often it is important from a psychological, as well as a physiological, standpoint to give the patient a "sexual boost." This is accomplished by a polyglandular extract (Orchic-Epinephrine Compound) containing pituitary anterior, prostate, gonads, solution of epinephrine, chloroform (1-1000, minims 2), and chlorbutanol (less than $\frac{1}{2}\%$).

This formula has been produced by researches of the author. If injection of one of these ampules is made every day for a period of thirty days, it will be found that after the sixth or seventh injection the patient's sexual tone will begin to pick up and in many instances at the end of the course of treatment, the patient will be within normal sexual limits. The benefit of this type of injection consists in the fact that it serves as a stimulant to the patient's own glands of internal secretion which will often begin to function actively as the influence of the injected polyglandular extract is felt. There has never been a single case in which any harm has resulted from the use of this material. It is not an irritant of the sexual organs.

Surgery of the prostate.—This subject will be discussed very briefly here in view of the fact that in a general article of this sort the intimate details cannot be gone into, and the author refers his reader to the Text Book of Urology, by Lowsley and Kirwin (1926).

Choice of Anesthesia.—The anesthesia to be used in operations upon the prostate should always be local, unless there is some specific contraindication. This local anesthesia may be either caudal, sometimes reinforced by parasc-

ral anesthesia, or spinal anesthesia, which under modern methods has proven to be quite a safe method.

The recent development of electrical instruments, which are utilized for the removal of small obstructing masses of the prostate, have been very helpful in the treatment of early cases of prostatism. In massive enlargements and particularly in infections of the prostate, the old tried and true methods have been found to be satisfactory. Generally speaking, the principle involved is to restore drainage as soon as possible with safety. It is well understood that if a patient has been completely or partially obstructed, immediate drainage is harmful. Such a patient must be gradually decompressed and then drainage instituted. In complete obstruction, due to acute prostatitis or abscess of the prostate, catheter drainage may be of temporary value.

The criteria for operating upon a patient suffering from acute prostatitis or prostatic abscess are (1) if there is obstruction to urination, which extends for a considerable period of time; (2) if there is marked fever with evident toxicity due to the retention of pus in the prostate; (3) if there is abscess present as manifested by fluctuation detected by rectal touch.

The operation of choice is perineal section, the release of pus from the prostate being accomplished by breaking into the prostatic tissue through the urethra. This will not result in persistent fistula. There are occasions, however, when a perineal dissection of the posterior surface of the prostate is indicated, and a drainage of the prostate through Denonvillier's fascia. Following the operation, the drain is left in for a period of five to seven days, the bladder being irrigated daily and the prostate treated in the same manner.

Vesical neck resection.—If the obstructing mass at the neck of the bladder is confined to the subcervical group or middle lobe, as it is sometimes called, or if the lesion is a fibrous elevation of the vesical orifice or other small mass, a vesical neck resection is indicated. If, however, there is, in addition to the obstruction mentioned above, large lateral lobe intrusion of the prostate with increase to two and one half or three times the normal size of the gland, it is then suggested that a prostatectomy be performed, either by the suprapubic route or by the perineal route. In other words, the surgeon should fit the operation to the condition which he finds in the patient and not subject every patient to the same operation. Different lesions require different methods of relief. Any surgeon who always does the same operation for every type of enlargement of the prostate is not keeping step with modern times.

Treatment of malignancy of the prostate.—If there is malignancy of the prostate present it can usually be detected by the palpating

finger, as a hard, board-like mass in the prostate gland. If this condition is early and the growth has not extended into the seminal vesicles or outside of the prostate in any direction, a total prostatectomy may be performed. On the other hand, if such extension has occurred, and frequently such is the case, the treatment is best performed by the relief of obstruction by means of a vesical neck resection which is particularly effective, as a carcinoma of the prostate is rigid and is not pushed into the canal made by the resectoscope due to its rigidity. In adenomatous hypertrophy of the prostate of massive size, a very different picture is encountered. A tunnel made by the resectoscope is seen filled by masses which could not be reached by that instrument at the first operation and such masses are pushed into the tunnel by the elastic capsule of the prostate and the elasticity of the hypertrophic tissue itself. As soon as the obstruction is relieved, radium is then applied in the form of gold or platinum Radon seeds, which are small glass seeds containing radium gas. These are implanted into the prostatic bed by inserting a stiff needle containing the seed through the perineum, the finger being placed in the rectum as a guide. The operator is careful not to implant the seeds closer than 1 cm. because necrosis with subsequent difficulties are liable to be encountered. If the seeds are separated by 1 cm. of tissue they cause irritation with the laying down of fibrous tissue, which results in lack of nourishment for the cancer cells, which are known to have one sixth the vitality of the normal cell. This procedure will prevent the growth of cancer in this region if the Radon is applied skillfully and if the patient is watched carefully so that reimplantation may occur if recurrence manifests itself.

Metastases occur usually in the bones in the region of the pelvis. This is a painful lesion and is controlled very satisfactorily by properly administered deep x-ray therapy. This treatment frequently has to be repeated and is not necessarily a curative agent but helpful and is certainly remarkable in the relief which it gives the patient.

Operative intervention for calculus of the prostate.—Operative intervention for calculus of the prostate is really quite simple. The prostate is exposed by the perineal route in the usual manner. Parallel incisions are made through the capsule into the prostatic glandular substance and the stones removed by means of a curette, from their various nests. The author has removed three hundred and twenty-five stones from the prostate of a man 28 years of age, without having him lose the function of the gland. Some years following this operation the patient was married and his wife gave birth to three children. This is direct evidence that the physiological prop-

erties of the prostate were not destroyed by the removal of the calculus in this case. In doing this type of operation one must be careful to remove the calculi without destroying the prostatic glandular elements, or at least preserve as many of them intact as possible.

O. S. L.

PROSTITUTION. (Latin, *prostitu-tio*; the word is used by the Christian Fathers, Tertullian, *circa* A.D. 195, Arnobius, *circa* A.D. 297, and others;¹ from *prostituere*, to lay out, expose;² *prostibuta*, a harlot;³ cf., also, *prostibilis*, *prostibula*, *prostibulum*, terms for harlot, which, however, are derived from *prostare*, to stand, to stand in a public place and offer one's wares.⁴)

Toward a Definition of Prostitution.—Although state regulation and police supervision of prostitution, with a view to the state's emolument as well as the safety and morals of its citizens, had existed for some time previous, having been instituted by Solon at Athens, it is not until we come to the Roman jurisconsult, Ulpianus, that we encounter something like a fully developed legal definition of the act or trade of prostitution. Up to that time, the popular conception had been a vague one, and it has not greatly altered in character to this day; it is sufficiently summed up, it may be, in the description of the *quaestuosae*⁵ given us by Plautus in his

Miles, the "*quae alat corpus corpore.*" It was with the *Lex Julia*, in the second century, A.D., that the Roman law began to take a more formal cognizance of the prostitute, which was to be elaborated by Ulpianus a century or so later. The latter's definition will be found under the *De ritu nuptiarum* (xxiii):⁶

"A woman publicly plies the trade of prostitution, not only when she prostitutes herself in a house of ill fame, but also when she frequents the wineshops or other places, without proper regard for her honor. By this is to be understood the trade of those women who prostitute themselves to all comers and without choice (*sine delectu*). The term does not apply to married women who are guilty of adultery, nor to girls who suffer themselves to be seduced. By it is meant prostituted women. A woman who has given herself for money to one or two persons is not to be looked upon as having publicly plied the trade of prostitution. . . . She who publicly prostitutes herself, even without accepting money, is to be classed with those women who make an open trade of prostitution."⁷

The Roman jurist thus establishes the pertinent points which go to make up the modern definition of prostitution. He emphasizes, it will be noted, the *public traffic* and the *promiscuity* (absence of choice, or emotional indifference). The stress on the public character of the act or trade is one that would be somewhat lessened to-day, perhaps. It was a natural one with the Roman, who was always a good deal concerned, from the time of Cato the Censor down to the degenerate days of the Empire, with the keeping up on an appearance of civic morality and with preventing offenses to the modesty of the chaste, that is to say, the Roman matron, and the class of *ingenuae*, or free-born women as a whole. With us, the important thing, in arriving at a definition, is not so much the attendant publicity or lack

¹ Arnobius, 2, 53; Tertullian, *Pudic.*, 6. Cf., also, Tertullian, *Apol.*, 27, where the word is employed in the sense of a dishonoring or profaning.

² Arnobius, 5, 177, employs the verb in this sense; but it is to be found with the meaning, to prostitute, as far back as Plautus (*Pseudolus*, 1, 2, 45).

³ Pliny, 30, 2, 5.

⁴ The verb occurs with the sense of offering one's body, in Seneca (*Controversiae*, 1, 2), Juvenal (1, 47, and elsewhere), and other writers. *Prostibilis* will be found in Plautus (*Persa*, 5, 2, 56, a doubtful reading); *prostibula* in Tertullian, *Apol.*, 6; *prostibulum* in Plautus (*Aulularia*, 2, 4, 6), and in Arnobius (6, 199), in the latter instance with reference to a male prostitute.

⁵ The *quaestuosae*, and the *quaestuariae* as well, derived their names from *quaestus*, gain or profit. (For *quaestuariae*, see Seneca, *De beneficiis*, 6, 32, and Ulpianus, *Digesta*, 23, 2, 43, where the word is used as an adjective, qualifying *mulier*.)

⁶ *Digesta* (*Libri Pandectarum*), 23, tit. 2.

⁷ What is given here is a paraphrase. Ulpianus' definition, it will be noted, refers to feminine prostitution only. There is, needless to say, such a thing as masculine prostitution, as well. Prostitution, however, in the meaning which usage has given the word, unless otherwise specified, has reference to the bartering of the female body.

of publicity as the *traffic*, experience in large cities having shown that the prostitute frequently may carry on her trade in the heart of a most respectable district, without her next-door neighbors being aware of it.

Ulpianus further differentiates prostitution from adultery and from simple, possibly casual fornication or seduction. In addition, and this is likewise a stress with which the modern social pathologist would agree, the practice even of sexual barter on a few occasions merely does not make a woman a prostitute; the act must have become *habitual*.⁸ And finally, the thing for which the prostitute barterers her body need not necessarily be money; as will be seen, in considering the history of prostitution, it is often, with the higher-grade courtesan, something else, such as political power, personal influence, etc.

The Roman legal mind, with its characteristic fundamental clarity, had succeeded in grasping with a degree of completion the implications of the act of prostitution, even as we understand it to-day. It was Christianity, with its theological bias, which was to muddle the definition. St. Jerome, in defining the *meretrix* as "one who submits to the lust of many" (*quae multorum libidini patet*), throws the emphasis upon the promiscuity, the "many." The general tendency of the early Christian teaching,⁹ however, is to confuse prostitution with bodily impurity in general, with the "sin of the flesh," the "corruption

of the body," incontinence of any kind, including fornication and adultery, as in the *Apostolic Canons*.¹⁰ In the *Apostolic Constitutions*, we have what may be taken as a third-century statement; since, while the *Constitutions* were attributed to Pope Clement, elected in 67 A.D., they undoubtedly were edited in the third century, in accordance with the feeling of the Church at that period. Here, we read¹¹ that "whoring (*scortatio*) is the corruption of one's own body, which does not look to the procreation of children, but has no other object than pleasure, which is an indication of incontinence, and not a mark of virtue."—This may be said to be, all in all, the view of Pauline Christianity, which is inclined to regard any sexual indulgence not having to do directly with procreation as a form of prostitution, and which goes so far as to condemn any undue pleasure in the relations between husband and wife.¹²

Something of the confusion brought by Christianity with regard to the meaning of prostitution is reflected in the euphemisms and circumlocutions of the modern lexicographer, as when the verb, to prostitute, is defined: "to offer, as a woman, to a lewd use," and the noun: "one who is prostitute; especially a woman who practises lewdness for hire; a harlot" (the element of barter is here taken

¹⁰ In the *Canons*, originally written in Greek, the words used with reference to prostitution are *μοιχεία*, adultery, and *καμάρωσις*, fornication (literally, in classical Greek, a vaulting or arching-over, corresponding to the original sense of the Latin *fornicatio*).

¹¹ vii, 27.

¹² St. Clement (*Paedog.*, ii, 10) defines clearly the purpose of Christian marriage: "The only object of a union is to have children, in order to make of them upright men and women. It is against reason and against law to seek in marriage nothing but pleasure; but one is not, therefore, to abstain from it, from fear of having children. Nature alike forbids, in youth and in age, an immodest relation between the sexes. Those to whom marriage permits carnal relations must be continually attentive to the presence of God, and must respect their bodies, which are His members, by abstaining from all glances, all contacts, which are illicit and unclean. . . ." This patristic doctrine is echoed in the medieval Penitentials; see Lacroix, *History of Prostitution*, Part ii, Chapter v.

⁸ Lacroix (*History of Prostitution*, Part ii, Chapter vi) speaks of "the fanciful doctrine of a casuist of the Middle Ages," which held that a woman was not properly a prostitute until she had had relations with 23,000 men! "By others," comments Mantegazza (*Gli amori degli uomini*, Nuova edizione, Firenze, 1930, p. 259), "this figure was reduced to from 40 to 60." And he adds: "It would seem that this colossal figure was approached by Madame Dubois, of the Comédie Française, who, on the 12th of September, 1775, boasted that she had had 16,527 lovers." (*Op. cit.*, p. 342.)

⁹ Cf. *Die Frau im römischen Christenprocess, Ein Beitrag zur Verfolgungsgeschichte der christlichen Kirche im römischen Staat*, Leipzig, 1905.

account of). Any such definition is too broad and loose a one, inasmuch as we are required, in turn, to define what is meant by "lewd" or a similar adjective, and become thereby at once involved in the question of social taboos and social prejudices; we are led, the short of it is, into a vague social-ethical domain in which there is no solid footing, and our predicament is like that of the censor, when called upon to specify what is "lascivious," "inciting to lust," etc. For "prostitution" is one of those terms which seem to all of us to hold a very definite meaning; it is when we come to put that meaning into words that we discover its elusiveness. Yet it is extremely important that we know and make plain what we mean, when we speak of prostitution. Failure to do so has on more than one occasion led the historian of the subject far off the path. A case of this is Paul Laeroix ("Pierre Dufour"), who treats prostitution as practically synonymous with sexual excess, or (as did the Pauline Christian) with any form of sexual expression outside a legally recognized monogamy, an attitude that reminds one of that "syndicate" of virtuous women of which Schopenhauer has something to say.

The lack of a satisfactory definition of prostitution, despite the fact that Ulpianus had provided one centuries before, is again seen in the fragmentary manner in which the subject was handled by historians and others, chiefly tract-writers, down to the nineteenth century. For a contemporary scientific definition, we may consider that provided by Abraham Flexner.¹³ It is from a social, in place of a theological or individual-moral, point of view that Flexner rightly approaches the problem. Prostitution, as he sees it, is marked by three characteristics: (1) traffic; (2) promiscuity; (3) emotional indifference. He makes the point that money is not of necessity the medium of exchange constituting traffic; and he goes on to bring out the fact that promiscuity does not necessarily exclude choice. When we survey it closely, we perceive that his definition is, for all practical purposes, that of the Roman jurist. The Flexner statement possibly lays more stress on the *emotional indifference*; although this may be read into the "*sine delectu*" of Ulpianus. (The Roman, on the other hand, as we are to see, was temperamentally inclined to an emotional frigidity in his sexual relationships.)

In connection with Flexner's definition, excellent as it is, there are certain questions which may be raised. One of these is in connection with the moot point, promiscuity, the number of men with whom a woman has relations. This is, likely, the weakest point of

the definition, from Ulpianus down. Is promiscuity essential to prostitution? There are moralists who would assert that a "legalized prostitution" between man and wife is possible, and even frequent.¹⁴ This is an obvious emphasis on the emotional indifference. The objection here, to one concerned with the social ethos rather than with individual ethics, is that prostitution is thus made an individual and not a social matter; it is only when the emotionless bartering extends to the group, becomes promiscuous, that society has a right to intervene. But in any case, an enlightened society is interested in the removal of those economic-social causes that occasion such a bartering or render it necessary.

Causes of Prostitution.—The causes of the phenomenon of prostitution have been the subject of much discussion in recent years, as man's social consciousness and conscience deepened and became more acute.¹⁵ It was empiric criminologists of the school of Lombroso and Ferrero, at the close of the last century and the beginning of the present one, who first entered upon an intensive study of the prostitute, from the point of view of anthropology and psychology and by the laboratory method.¹⁶ Prostitution, to them, was a form of crime; and it is as our view of crime has gradu-

¹⁴ This form of "prostitution" will be found spoken of in those family medical guides which were so popular in the last century. This, incidentally, is much the point of view taken by Mantegazza, throughout. It is, however, essentially an individual-moralistic one.

¹⁵ Consult: *Downward Paths, an inquiry into the causes which contribute to the making of the prostitute*, by A. Maude Royden, London, 1916; *Some Social Causes of Prostitution*, by Mary Wilcox Glenn, proceedings of the National Conference of Charities and Corrections, Fort Wayne, Indiana, 1914; *The Girl That Goes Wrong*, by Reginald Wright Kaufman, New York, 1911; *Prostitution considered in relation to its cause and cure*, by James Miller, Edinburgh, 1859.

¹⁶ *La Donna delinquente, la prostituta e la donna normale*, per C. Lombroso, e G. Ferrero, nuova edizione, Torino, 1903. Also: *Deucento criminali e prostitute studiate nei laboratori di clinica e di antropologia criminale di Torino*, per S. Ottolenghi e V. Rossi, con prefazione de Cesare Lombroso, Torino, 1897. For French studies: *Psychologie physiologique de la prostitution*, par le Octave Simonet, Paris, 1911; and *Voyages d'étude physiologique chez les prostituées des principaux pays du globe*, par le Grandier-Morel, Paris, 1901.

¹³ *Prostitution in Europe*, by Abraham Flexner, Introduction by John D. Rockefeller, Jr., New York, 1914. Also: *A Study of Prostitution in Europe*, The Medical Record, New York, 1914, xxxv, pp. 325-28 (issued in reprint).

ally evolved into a social view that our attitude toward prostitution has undergone a change.

Is the prostitute "born" or "made"? That is the core of the question. The tendency of science, with the data afforded by sociology and social psychology, has been more and more to say no to the "born." It is true enough that prostitutes, when closely studied, as they have been in recent years,¹⁷ are found to exhibit certain stigmata which would appear to mark them as a class. Among these may be mentioned: the physiologic-psychologic characteristic of sexual precocity and hypersensuality; indolence; inordinate love of pleasure; carelessness and improvidence; vanity; dishonesty and an inclination to theft. The question that next arises is, in how far are these traits due to, explainable by, social conditioning, early environment and the like; for the tendency in accounting for the prostitute is away from heredity, of which a Lombroso would make so much, and in the direction of environmental influence.

As an illustration, sexual precocity may frequently be traced to housing conditions, to an overcrowded home, productive of an incestuous promiscuity. Any metropolitan social worker will be able to testify to the number of delinquent girls who have been ruined by their fathers. Parental incompatibility and the resulting break-up of the home is another well known contributing factor.

But no other one factor stands out so strongly in the making of the prostitute as does poverty. This was recognized long before the sociologist came upon the scene, as the following couplet from an old French romance will show:

¹⁷ Consult: *Mental Deficiency of Prostitutes, a study of delinquent women at an army post of embarkation*, by Paul A. Mertz, Washington, 1919; *Studien über Persönlichkeit und Schicksal eingeschriebener Prostituirter*, von Kurt Schneider, Berlin, 1926; *Mental and Physical Factors in Prostitution*, by Edith R. Spaulding, proceedings of the National Conference of Charities and Corrections, Fort Wayne, Indiana, 1914 (Session 41, 1914, pp. 222-29).

*Maint homme a essillié et torné à servage,
Et mis par povreté mainte femme au putage.*¹⁸

One might go a great deal farther back than this. From time immemorial, the prostitute has been the victim of economic circumstance, of an *economic inferiority*, which, leading her into the sorry trade, has kept her a slave to pimp or "landlady," and often virtually a chattel of the state.¹⁹ The economic factor comes out vividly in the case of what is known as "occasional" prostitution, which has been shown to fluctuate in accordance with seasonal occupation.

The short of the matter is, that while the prostitute may appear, prevailingly, to be devoid, or all but devoid, of anything like a moral sense, displaying what we to-day would describe as a "moron" mentality, this mental and moral under-development is readily traceable to social roots. We now know that a social phenomenon such as war, for instance, has an immediate and strongly marked relationship to prostitution.²⁰

Most significant of all is the established fact that the vast majority of

¹⁸ Freely: "For many a man, by reason of her poverty, has made a slave and a whore of many a woman." Cf.: *Beiträge zur Geschichte des Pauperismus und der Prostitution in Hamburg*, von Gustav Schonfeldt, Weimar, 1897; *On some causes of Prostitution, with special reference to economic conditions*, a paper read at the XIth Congress of the International Abolitionist Federation, held in Paris, June 9-12, 1913, by Helen Mary Wilson, London, 1916.

¹⁹ See the extremely interesting documents, taken from the archives, on early Venetian prostitution (from the thirteenth to the sixteenth century) in Carlo Calza's *Documenti inediti sulla prostituzione, tratti dagli Archivi della Repubblica Veneta*, Milano, 1869. Mantegazza makes free use of this material (*Op. cit.*, note 8, above), pp. 273ff. (Part Second, Chapter xv.) These documents bring out, forcefully, the slavery of the prostitute and the relation of prostitution to poverty. But no where has this been more impressively done than in Jacques Roberti's novel of a present-day French prostitute, entitled *A la Belle-dénuît*, Paris, 1931, published in English translation (by Samuel Putnam), New York, 1932, under the title of *Without Sin*.

²⁰ See Mertz, *Op. cit.*, note 17, above.

prostitutes come from the proletariat; for a biologic predisposition would hardly be confined to one class. Household servants, in Europe the peasant class, have ever contributed largely to the ranks of prostitution.²¹ This is to be kept in mind in studying the relation of prostitution to other social problems, such as alcoholism,²² crime,²³ venereal disease,²⁴ and other factors. Prostitution in its turn provides society with certain grave issues, such as that of public sanitation,²⁵ a topic that interests forensic, along with curative and prophylactic, medicine,²⁶ and a problem, it may be added, which the state may be said, on the whole, to have failed to solve.²⁷

The only logical conclusion is to the effect that prostitution is a *social disease*,²⁸ and that, while there may be predisposing factors, in the form of heredity, the development of the malady is very much a question of environmental conditions. It is, moreover, a disease that, as its history will reveal, does not readily yield to palliative measures; the only effective treatment appears to be a radical social surgery; the practical non-

existence of prostitution in the Soviet Union should be enlightening upon this head.

Prostitution, it may be observed, affects not merely the prostitute, but has its reflex upon woman's position in society as a whole, including her position as a wife. This it is which in recent decades has accounted for the feminist's vital interest in the question, particularly as regards the "white slave traffic" and the question of abolition versus state-police regulation. Nor are the demoralizing effects limited to woman; they are visible also in the male's moral fiber and social outlook; for prostitution in its way is as deleterious to the purchaser as to the vendor, and has the effect upon society as a whole that any "*plaie sociale*" does, for which each member of society has his share of responsibility.

The etiology of prostitution having been in a manner established,²⁹ the inquiry may be raised as to what is the cure. That, however, is a question which must be deferred until after a consideration of the case history, so to speak, of the disease.

History and Historians of Prostitutions.—Allusion has been made to the fragmentary character of the treatises on prostitution up to the nineteenth century. These chiefly took the form of tracts on special phases of the subject, the relation of prostitution to venereal disease, to alcoholism, etc. And the attitude of the author is often anything but scientific. It is not, indeed, until the last century that anything resembling a scientific treatment is to be met with. It was, doubtless, a new social feeling in the air, the same feeling that found an expression on the literary plane in the work of Zola and his followers, which led to the question being taken up and dealt with in a spirit that had not before been manifest. The era of the document and documentation had set in. At any rate, it is worth noting that, during the thirty years from 1839 to 1869, we have half a dozen or more works dealing with

²¹ E. Hurwicz, *Kriminalität und Prostitution der weiblichen Dienstboten*, etc., in the *Arch. für Kriminal-Anthropologie und Kriminalistik*, Leipzig, 1916.

²² *Alcoolisme et prostitution*, par Mme. Le-grain, Paris, 1901.

²³ Anton Baumgarten, *Die Beziehungen der Prostitution zum Verbrechen*, in the *Arch. für Kriminal-Anthropologie und Kriminalistik*, Leipzig, 1902, v. 11, pp. 1-35; and the same author's *Polizei und Prostitution*, *ibid.*, v. 8 (1902), pp. 233-247. But especially, see *Verbrechen und Prostitution als soziale Krankheitserscheinungen*, von Paul Hirsch, Berlin, 1897.

²⁴ See the general Bibliography at the end of this paper.

²⁵ See the general Bibliography.

²⁶ *Statistische Untersuchungen zum Problem der Prostitution und der Geschlechtskrankheiten vom Standpunkt der sozialen und forensischen Medizin*, von Paul Niehaus, Zurich, 1914.

²⁷ Cf. *Inutilité de la surveillance sanitaire des prostituées; rapport présenté à la conférence de Lugano le 21 septembre, 1907*, par Ernst Carl Edouard Camille von Düring, Genève, 1907.

²⁸ See Hirsch, *Op. cit.*, note 23, above.

²⁹ Consult: *A New Conscience and an Ancient Evil*, by Jane Addams, New York, 1912; also, *The responsibility of the average man for the pimp and procurer*, an address delivered at the World's Purity Congress, Louisville, Kentucky, November 12, 1917, by Howard Clark Barber, New York Society for the Prevention of Crime, 1917.

the theme, a theme which in the past had been looked upon as too unpleasant to merit the consideration of a respectable writer. Since that time, with a new-dawning social consciousness, the literature of prostitution has grown constantly more abundant, as well as more scientific.

Among the treatises appearing during the thirty-year period mentioned, we may notice: the work by Béraud (1839) on the *filles publiques* of Paris and the policing of Parisian prostitution, with a *précis* of the history of prostitution; Rabutaux' essay on prostitution from ancient times to the end of the sixteenth century, with a bibliography by Lacroix; Parent-Duchâtelet's *De la prostitution dans la ville de Paris*; the *History of Prostitution* by Lacroix ("Pierre Dufour"); the treatise by Hügel of Vienna, in 1865; and finally, Sanger's *History*, in 1869.³⁰

Until recently Parent-Duchâtelet's work was regarded as the classic one. Lacroix, in the Introduction to his *History*, remarks that Parent-Duchâtelet "was an observer, and not a historian and archaeologist," and that he had "only viewed and judged prostitution from the point of view of public administration, hygiene and statistics." This intended criticism is a tribute to the new spirit by which the author was animated. What the rambling and utterly unscientific, however fascinating Bibliophile Jacob fails to realize is, that Parent-Duchâtelet is for the first time tackling prostitution as a social problem, and that, so far as science is concerned, the pseudo-archaeologizing and pseudo-historicizing of the Lacroix brand may very well go by the board. Needless to say, the *De la prostitution dans la ville de Paris* is some while since dated, but it for long served admirably to fill a yawning gap.

As for Lacroix' own six-volume account, it is, as has been indicated, thoroughly unscientific in character, as the reader will quickly perceive by merely casting an eye over the author's Introduction and Conclusion. Lacroix, apparently, lacks any conception of the real social implications of prostitution, and there is a glaring absence of any determining point of view, and of the calm, dispassionate attitude of the true scientific investigator. The tone throughout is anecdotal, much in the manner of Herodotus, and nearly every page is, further, tainted by an unpleasant Christian-moralistic hypocrisy. Prostitution is here treated as answering to Richelet's definition, a "disordered life."³¹ When all is said, these

volumes will remain a mine of delightful and frequently valuable information of a miscellaneous sort; but their scientific worth is all but nil.³²

Of Sanger, much the same might be said as of Parent-Duchâtelet. His *History*, published in revised form in 1898, was for something like forty years the most extensive work in English on the subject; but it, too, of course, is no longer adequate. There are yet other nineteenth-century works which will be considered later in dealing with that period, such as Guyot's, Behrend's, Kühn's, Commenges', Schrank's, and others, treating either of the subject of prostitution in general, or of prostitution in particular countries or cities, in addition to certain more or less special treatises like Jeannel's and Blaschko's, dealing with such aspects of the problem as venereal disease, sanitation and the like. There are also scattering works from the early 1900's of a similar nature.

It is, however, with the publication, in 1914, of Abraham Flexner's *Prostitution in Europe*,³³ together with the appearance of a number of reports, such as Kneeland's *Commercialized Vice in New York City*³⁴ and the reports of the Vice Commission of Chicago and the Committee of Fourteen and the Committee of Fifteen of New York,³⁵ that what may be termed the contemporary study of prostitution starts. It was, likewise, in 1914 that William Burgess' *The World's Social Evil*³⁶ appeared, as did McMurtrie's *A Study of Prostitution in Europe*;³⁷ and to the same period belong such

definition given in the 1835 edition of the *Dictionnaire de l'Académie*: "an abandonment to impudicity."

³² For all of that, Lacroix has had his imitators and his plagiarists. Two works may be cited which are direct steals from "Dufour": *La Prostitution à travers les âges*, par Caufeynon, Paris, 1902; and *La Prostitution desde los primitivos tiempos*, por E. Garte, Barcelona (without date).

³³ See note 13, above.

³⁴ *Commercialized Vice in New York City*, by George J. Kneeland, with a supplementary chapter by Katherine Bement Davis, Introduction by John D. Rockefeller, Jr., New York. See also: *Prostitution in New York City*, a study in social hygiene, Medical Record, New York, 1913, lxxxiii., pp. 970-74 (issued in reprint).

³⁵ Consult: *The Social Evil in New York City*, New York, The Committee of Fourteen, 1910; *Report of the Committee of Fifteen on the Social Evil*, 2nd edition,

Chicago, The Vice Commission of Chicago, 1911.

³⁶ Chicago, 1914.

³⁷ New York, 1914.

tion. Richelet revised his definition to read: "that illicit abandonment of her body in which a girl or a woman indulges with some person, that the person in question may take forbidden pleasures with her." Lacroix also quotes the

Continental studies as those by Mehr,³⁸ Leonhard,³⁹ Chéry,⁴⁰ and others. The prostitute and the dwelling problem is treated by Haldy;⁴¹ and the War is soon to cast various phases of the question of prostitution into bold relief. Le Pileur and Bizard are to make their contributions here;⁴² while in America, military camps and ports of embarkation are found to afford an unrivaled clinic for the student of social pathology.⁴³

Immediately following the War, we have Fischer's *Die Prostitution*;⁴⁴ and in 1920 or thereabouts, the Spaniard, L. Massa Cortes, gives us his account of present-day prostitution.⁴⁵ An interesting symposium of this era is *What Representative Citizens Think of Prostitution*, published at Washington (1921). Beginning with 1922, the League of Nations reports on the international traffic in women and children constitute a valuable statistical source.⁴⁶ In 1926, Boiron provides us with his historical-contemporary survey of prostitution, in relation to public opinion and the question of state regulation versus abolition, in France and other countries.⁴⁷ Another backward glance over the field, with something of an eye to political and social aspects, is that of Ernest Armand⁴⁸ (1931).

³⁸ *Die geheime und öffentliche Prostitution in Stuttgart, Karlsruhe and München, mit Berücksichtigung des Prostitutionsgewerbes in Augsburg und Ulm sowie den übrigen grosseren Städten Württembergs*, von A. Mehr, Paderborn, 1912.

³⁹ *Die Prostitution; ihre hygienische, sanitäre, sittenpolizeiliche und gesetzliche Bekämpfung*, von Stephan Leonhard, München, 1912.

⁴⁰ *Syphilis, maladies vénériennes et Prostitution*, par Charles Chéry, Toulouse, 1912.

⁴¹ *Die Wohnungsfrage der Prostituierten, eine juristische Betrachtung*, von Ludwig Wilhelm Haldy, Hannover, 1914.

⁴² *Les Maisons de prostitution de Paris pendant la guerre*, par Léon Bizard, Poitiers, 1922; *Indications sur la prostitution vulgative à Paris depuis le début de la guerre*, par Le Pileur, Paris, 1918; also, Alfred Blaschko's work on the War and sexual disease, cited in the general Bibliography.

⁴³ Mertz, *Op. cit.*, note 17, above.

⁴⁴ *Die Prostitution*, von Wilhelm Fischer, Stuttgart, 1919.

⁴⁵ *La Prostitución en nuestros dias*, por L. Massa Cortes, Barcelona, 1920.

⁴⁶ See general Bibliography.

⁴⁷ *La prostitution dans l'histoire, devant le droit, devant l'opinion; préface de M. Georges Renard. . . Histoire de la Prostitution, la réglementation en France, la prostitution à l'étranger, les doctrines abolitionnistes, dernières tendances françaises*, par N. M. Boiron, Nancy, 1926.

⁴⁸ *Libertinage et prostitution (grandes prostituées et fameux libertins); l'influence du fait*

There are numerous other works which might be cited;⁴⁹ only a few of the outstanding ones have been touched upon. Of those mentioned, it goes without saying, not all are of equal value. The list of works given should enable the reader to form some idea of the general nature of the bibliography on the historical side, down to Iwan Bloch's two-volume German treatise, which is perhaps the most authoritative single one.⁵⁰ This is not to include tracts or essays of a more special or controversial nature, such as the extensive literature on the white slave traffic,⁵¹ or on the subjects of regulation, sanitary supervision, abolition, etc.

And now, having made the acquaintance of the leading historians, we may look at the history of prostitution, in its various epochs and stages.

Prostitution among Ancient and Primitive Peoples; Religious and Guest Prostitution, Prostitution for Dowries.

—Prostitution has existed from the earliest times of which we have any historic record.⁵² On the other hand, it is far from being as common as might be supposed in primitive races and primitive ages. One reason for this is that, in such a society, woman is not sufficiently mistress of her body to be in a position to dispose of it, while in a matriarchal group, she is too much the mistress to feel any constraint or desire to prostitute it. For one thing, as Mantegazza points out, we are not, by applying Ulpianus' principle of promiscuity, to confuse an institution such as polyandry with prostitution.⁵³ There is really very little danger of doing so, at least for the one who is possessed of some anthropological orientation, in the case of an institution so clearly marked,

sexuel sur la vie politique et sociale de l'homme, par Ernest Armand, preface par Exel Robertson Proschonsky, Paris, 1931. (An anecdotal work.)

⁴⁹ See *The Psychopathology of Prostitution*, by Samuel Putnam, in *Woman's Coming of Age*, edited by Samuel D. Schmalhausen and V. F. Calverton, New York, 1931, pp. 310ff.

⁵⁰ *Die Prostitution*, von Iwan Bloch, Berlin, 1912-25.

⁵¹ For a bibliography of the literature on this head, see *White Slave Act, a list of bibliographical references (January 17, 1930)*, Washington, 1930.

⁵² See: *The Primitive Origins of Prostitution*, Lancet-Clinic, Cincinnati, 1913, ex, pp. 457-60.

⁵³ Mantegazza, *Op. cit.*, note 8, above, p. 259.

so respectable and so bulwarked by social sanction as is polyandry.

As for a pure, commercialized prostitution, it is to be encountered, but not too plentifully, among certain savage or near-savage tribes existing to-day.⁵⁴ Kafir girls will exchange their favors for glass beads or brass baubles, and the act is known as "playing with the cocks." Nicaraguan women give themselves for money, and a similar prostitution is said to have existed in a few American Indians tribes, among which may be mentioned the Carolinas (though this has been denied), the Chinooks, the California Yumas, and the Colorados. Among such races we sometimes come upon what might be described as a crude or embryonic form of state-regulated prostitution, with the chief or head of the tribe deriving a good share of the revenues. This is said by some to have been the case among the American Carolinas, as it is with the Dahomey tribes of Africa. In the latter instance, prostitutes receive a special course of instruction to fit them for their profession.

In other yet more venerable races that have disappeared to-day, like the ancient Mexicans and the Ancient Peruvians, the prostitute was tolerated but looked down upon. With the Aztecs, she was often a camp follower, and it was not uncommon for her to seek death in battle out of sheer desperation at her lot; while the Incas compelled their courtizans to live outside the city wall. Among certain barbaric peoples, such as the natives of the Gold Coast of Africa, a bastard form of prostitution is discovered, one that is identical with the modern "badger game," and which consists in the wife's prostituting herself with the connivance of her husband, in order that the latter may be able to collect an indemnification from her "seducer." Prostitution is frequently brought in by the white man, the foreigner, as among the Malays, who in their unpolluted

native state are almost free of the vice.⁵⁵

In China and Japan, prostitution has been an institution from a remote date, and would seem to have undergone little if any change in form. Both races are known for their eroticism, their refinements in lust, as vividly expressed in their graphic art.⁵⁶ The Hindoos, too, have a whole "art of love" and love literature of their own.⁵⁷ Far-Eastern eroticism is a subject in itself, and one for the most part beyond the scope of this paper, which is concerned, not with eroticism, but with prostitution as a social phenomenon, whose significant implications for society have largely been developed in the Occident.

Looking at prostitution in ancient times, we are able to make out two salient forms: Hieratic or Religious ("Sacred") Prostitution; and Hospitable or Guest Prostitution. The tendency of anthropology now is to diminish the stress on the latter, as incompatible with an evolving monogamy and the male's growing sense of proprietorship. Its existence was probably more or less incidental, among races coming up to civilization, and represented a masculine imposition on the part of the head of the house, who thus offered his wife, daughter or handmaiden to the stranger under his roof. Nevertheless, traces of it are still discernible among certain African tribes.⁵⁸ In antiquity, it was

⁵⁵ Cf. the Algerian almehs, who ply, especially, a trade with the French colonial soldiery. Mantegazza, *ibid.*, pp. 343-4.

⁵⁶ See: *Das Geschlechtsleben in Glauben, Sitte, Brauch und Gewohnheitsrecht der Japaner*, von Friedrich S. Krauss, Leipzig, 1911. This work is accompanied by a number of reproductions of typical specimens of Japanese erotic art. On Mongolian prostitution, see *Die Prostitution bei den gelben Völkern*, von E. Schultze, Bonn, 1919. See, also: *On Prostitution in China*, Vigilance, New York, 1919, xxvii, No. 7, pp. 10-16 (issued in reprint); and: *Prostitution in Japan*, by Douglas C. McMurtrie, New York Medical Journal, New York, 1913, pp. 278-81 (issued in reprint).

⁵⁷ See Richard Smith's *Beiträge zur indischen Erotik*, Leipzig, 1902.

⁵⁸ The unreliable Lacroix, in his Introduction, makes the statement that "Lapland . . . is the sole place in Europe where guest prosti-

⁵⁴ Mantegazza, *ibid.*, pp. 261ff.

practised in Phoenicia, according to Eusebius' account, and there are vestiges of it in the Old Testament. It may be noted in passing that where marital jealousy was extremely keen, as with the ancient Gauls, it found no foothold.

Guest Prostitution, in its degenerate stage, becomes merely a form of prostitution, pure and simple, within the walls of the home. It had attained this form with the Babylonians, as Quintus Curtius tells us, where daughters were sold to "guests" for money; and we find a corresponding custom with the American Assineboins, who expected the guest to make a "present" in return for favors bestowed upon him.⁶⁰

Religious Prostitution was a good deal more deeply rooted than the other variety. There are evidences of it from very early periods. India's cult of the lingam found a reflection in Greek phallic worship and Egyptian priapic rites. At Babylon, this species of prostitution was in full bloom, centering about the worship of Mylitta, the Babylonian Venus.⁶⁰ The roped lanes of Babylon, thanks to Herodotus, have become famous. Each woman, however respectable, according to the gossipy Greek historian, was required once in her life to go to the temple, sit in one of these lanes, and offer herself to the male strangers who sauntered up and down and took their choice; nor was she permitted to return home until some stranger had laid silver upon her knees, saying, "I invoke the goddess Mylitta." The money thus obtained was originally deposited upon the altar; but this proved to be a stepping-stone to commercial prostitution. The prophet Baruch, Jeremiah's amanuensis, speaks of these "consecrated" women; and we hear of the same thing some three centuries after Herodotus, from Strabo and from Quintus Curtius.

Sexual life at Babylon grew constantly more depraved. Besides the reputation is still practised to-day (i.e., in the mid-nineteenth-century).

⁶⁰ Mantegazza, *Op. cit.*, p. 262.

⁶⁰ Herodotus, 1, 131.

ligious festivals, in honor of Venus and Adonis, the riotous banquets were a source of corruption, as was also, according to some, the progressive nudity of the population, including the higher classes.

The worship of Mylitta spread to Egypt and to other parts of Africa. By the Armenians and the Persians, Strabo tells us, Venus was worshiped under the name of Anaïtis.⁶¹ The rites are said to have been accompanied by prostitution on a large scale, in a temple annex, in reality a seraglio of the two sexes, open to strangers only. It was hither that Armenian daughters came for "religious experience," the money they earned going to the goddess' shrine. Upon emerging, the girls took lawful husbands; and the greater the number of men with whom they had had relations, the more they were sought after. But sometimes, in place of accepting money, the women rewarded the strangers for their favor.

The Syrian rites of Venus (Lucianus is our authority here) were imported from Phoenicia, where Aphrodite had been metamorphosed into Astarte, and were associated with prostitution. Worship was also paid to Astarte at Tyre, Sidon, and other places. There were a number of shrines to the divinity, a celebrated one at Heliopolis and another in the Mt. Lebanon region. On the island of Cyprus, as well, there were fully a score of temples to Astarte of the Phoenicians, including the well known ones at Paphus and Amathus, where young girls were in the habit of walking along the seashore, to sell themselves to strangers disembarking in the island. The money went, not to the altar, but to the providing of dowries, a custom that lasted down to Justinian's time.⁶² The temple of Paphus was famous as far back as Homer's day, since we find mention of it in the *Odyssey* (viii, 363).

As to prostitution as a means of earning a dowry, the anthropologist will tell

⁶¹ According to Pausanias (3, 16, 8), this was a Lydian name for Diana.

⁶² Herodotus, 5, 105.

us that this is not uncommon among primitive races.

It was the culturally fertile Phœnicia that gave the rites of Venus to Greece and to Italy. These rites were accompanied by a prostitution of which money was the essential feature. Here, once again, the dowry enters. There was an island at Carthage where women went for the purpose of procuring their dots, the chief contributors being sailors, and it was no doubt for this reason that the temples of Venus were commonly built on tall sea cliffs. It is not surprising, if we find St. Augustine alluding to this worship of the Love-Goddess.

With the debauched and effeminate Lydians, if we are to credit Herodotus, prostitution had more or less dropped its religious guise and was practised frankly for gain. The ritual of Venus was, however, known and observed. The Lydians proceeded to corrupt their Persian conquerors, who in turn improved upon the lesson they had learned, to judge from the accounts of their orgies left by Athenæus and Macrobius.

The Chaldean, and especially the Midianite, cult of Baal, offers another example of religious prostitution, accompanied by indescribable excesses, which included bestiality and male prostitution, the profits being devoted to the altar. The Hebrews later became acquainted with Baal and with the "daughters of Moab," and the wrath of Jehovah was thereby excited; as Babylonian captives, they had witnessed the rites of Mylitta, whom they knew as Molech.

Hebraic Prostitution; the "Foreign" Woman and the Purity of the Home.—There had been prostitution among the Hebrews from the time of the patriarchs, or for not less than eighteen centuries before Christ. The story of Judah and Tamar may be read in the thirty-eighth chapter of *Genesis*, and the story of Moses and his dusky mistress has come down to us. Solomon, David and other kings in Israel were famous for their concubines; and medical men now know that the Psalmist's malady of

the "bones" was but a symptom of venereal disease. Solomon had fallen under the influence of foreign deities, and prostitution was carried on in the Temple, in connection with the rites of Molech and Baal, as is evident from the book of *Maccabees*. It has even been surmised that this was the traffic of which Jesus purged the Temple; inasmuch as the variety of merchandise is not specified, and *Maccabees* would appear to justify such an interpretation.

Hebraic prostitution, when we come to study it, presents a new facet. Prostitution is now, in a manner, legalized—and with the object of preserving the purity of the home—with the object, that is, of affording a protection for the "good" women, mother, wife, sister, daughter; for the Jew, along with a persisting tendency to the theory, if not invariably to the practice, of monogamy, has had since earliest times a strongly developed sense of the family. By way, accordingly, of keeping the family "pure," he will relegate prostitution to the "strange" or "foreign" woman, forbidding it to the women of his own race.

This does not mean that patronage of the prostitute is forbidden to men; the Old Testament standard of sexual morality is obviously a double one. The Mosaic code—which, of course, is broader than the Decalogue—as we look back on it to-day, is seen to have been highly pragmatic in character; coming as a remedy to that promiscuity, doubtless accompanied by physical infection, in which the Jews had lived in Egypt, it is greatly concerned with sanitary and hygienic prohibitions and regulations; but the one thing it does not attempt to do is to enforce a strict monogamy on the male; the thing that is proscribed is adultery, interference with the family or the property of another, the coveting of another's wife, as of his ox.

The results and the reflection of ancient Jewish prostitution are to be seen in the prophets, in Ezekiel and Jeremiah. The frequency with which the image of the harlot occurs is striking; and out

of the wisdom of age, the dissolute Solomon could paint, as in the fifth and seventh chapters of *Proverbs*, an unforgettable picture of the prostitute, setting over against it, in the concluding chapter, a portrait of the model wife.

Turning now to Egypt, we find a religious and a commercial prostitution flourishing side by side, without ever being frowned upon by the law. The Phœnician cult of Venus Astarte is here transferred to Isis, who, as Herodotus has it, answers rather to the Greek Demeter, or Ceres.⁶³ The same writer informs us that Isis was also worshiped at Bubastis under the name of Diana, the priests taking unto themselves the revenues that accrued. It is Herodotus once more who tells us that the Pharaohs resorted to prostitution as a means of raising money for the erection of the Pyramids. Cheops is reported to have prostituted his own daughter for the sake of the Great Pyramid, while the Pyramid of Mycerinus was attributed to the labors of the courtesan, Rhodopis. There were two courtezans of the name of Rhodopis; in addition to the one of whom Herodotus speaks,⁶⁴ there was the Rhodopis who became Psammaticus' queen.⁶⁵

For the prostitute in Egypt had become a successful business woman; she appeared at court functions and occupied an important place in society, one that carried with it power and influence; she no longer, as among the Hebrews sat by the side of the road with her face veiled. In her, we behold the prototype of the Greek hetaira, the Renaissance and the French eighteenth-century mistress. The Egyptian courtesan was noted for her exorbitant prices, which gave rise to a number of anecdotes; Archidice is an instance.⁶⁶

The anecdotal element, it will be perceived, is a ponderable one in these early accounts; none the less, beneath the anecdote, there must have been some basis

in fact. The truth is, as one proceeds with a study of ancient prostitution, he becomes early, and more and more, aware of the entrance, the intrusion and persistence, of an economic factor.

Prostitution in Ancient Greece; Solon Legalizes Prostitution; Appearance of the "Segregated District"; the Hetaira; Greek Concubinage; Position of the Greek Wife.—Prostitution, with the Greeks as with the Jews, was firmly established for some eighteen centuries before Christ. Religious prostitution in Hellas took the form of a worship of Aphrodite Pandemos, or the Aphrodite "of the people," as contrasted with Aphrodite Uranios, the "heavenly" one. The former is the Aphrodite of whom we hear Socrates speaking.⁶⁷ She seems to have been little more than a personification of prostitution. Her rites, like those of Adonis, had been imported from Phœnicia and from Asia. They were supposed to have been instituted by Theseus. In any event, her statue was the first to be erected in the public square; and her day was the fourth of every month, on which day the intake from prostitution went to the upkeep of her temple. The festivals of Adonis were similar in character and enjoyed an equal popularity.

The temple of Aphrodite at Corinth possessed more than a thousand "consecrated" courtezans; for it was the custom to dedicate young girls to the goddess, by way of securing her favor, or as a thanks-offering. Thus, in Pindar's Ode,⁶⁸ we hear Xenophon of Corinth, the Olympic victor, before setting out for the games, promising to give to Venus fifty hetairai, if she will enable him to win. He won, and paid his debt. It was circumstances such as these, together with the number and avidity of its prostitutes, which gained for Cor-

⁶⁷ Plato, *Symposium*, 180 E, sq.; Xenophon, *Symposium*, 8, 9. Plato says: "There are two Aphrodites, the one very ancient, without a mother and the daughter of Uranus, from whom she gets the name of Uranios; the other younger, daughter of Zeus and Dione, whom we call Aphrodite Pandemos."

⁶⁸ *Odes*, 13, 38 sq.

⁶³ Herodotus, 2, 59, 156.

⁶⁴ Herodotus, 2, 134.

⁶⁵ Aelianus, *Variae Historiae*, 13, 33.

⁶⁶ Herodotus 2, 135.

inth the reputation of being a depraved and a "dangerous" town; as the old proverb, quoted by Strabo, ran: "It is not with impunity that one goes to Corinth."⁶⁹ The city's reputation in this respect even put a verb into the lexicon: *corinthiazomai*, which Liddell and Scott define as: "to practise whoredom, because Corinth was famous for its courtezans."⁷⁰

The degeneration of the Greek erotic principle, as embodied in the conception of Eros, is traced elsewhere in this work (see LITERATURE AND LOVE). It may merely be pointed out here that, just as the idea of Eros was weakened and vitiated by the pluralization of the god into a number of simpering Erotes (the Roman Cupids), so was the concept of Aphrodite debased through a similar process of pluralization and vulgarization. A Homeric manliness, standing aloof from sexual indulgence as something calculated to sap the warrior's strength, had been lost along the way; and by the time of Solon (sixth century B.C.), a commercialized promiscuity had attained the level of an institution, important enough to be taken over and directed by the state.

Before giving our attention to the great Athenian legislator's enactments on the subject of prostitution, it may be instructive to cast a glance at the various phases of the pluralized Aphrodite Pandemos, as symbolized in the diverse names bestowed upon the goddess. We make the acquaintance of an Aphrodite Callipygos, or one "of the beautiful rump";⁷¹ of an Aphrodite Scotia, or the Venus of the Dark; of an Aphrodite Peribasia, or the Protectress; of an Aphrodite Melainis, or the Dusky Venus; of an Erycina, or the Aphrodite of Eryx; etc.; the list might be prolonged.⁷²

⁶⁹ Another form of the proverb was: "It is not permitted to all the world to go to Corinth."

⁷⁰ See Aristophanes, *Frogs*, 133.

⁷¹ There is a statue of this name at Naples.

⁷² Cf. the Latin names: Salacia; Pudica; Genetrix; etc. (See APHRODITE.) Cf. the various attributes of Our Lady.

It is with the code of Solon that prostitution, for the first time that we know of in history, achieves a definite legal status, becoming an adjunct of the commonwealth. What we have here is really the beginning of state regulation, and, incidentally, of the "segregated district," as well, for the law-giver of Athens saw fit to confine the commerce in prostitution to the Piraeus, or; in general, the region beyond the city walls⁷³ and along the wharves—a good part of Venus' custom being, still, from the sea. Solon proceeded to open a large *dicterion*, or state brothel, the inmates of which were known as *dicteriadai*. This institution is said to have been an orderly and well conducted one; and the legislator won the praise of the poet, Philemon, for having thus provided an exhaust for the ebullient passions of the Athenian youth.⁷⁴

At Sparta, prostitution was more or less incidental, not to say accidental. This was due to the character of the life there, and of the people, which has given the adjective Spartan its meaning. Conditions prevailed that were not unlike those in the Soviet Union to-day; and in a stern and vigorous society of this sort, the libido naturally tends to find a "sublimation." The sexes were in the habit of mingling semi-nude in athletic exercises, the women wrestling and otherwise competing with the men. The result may be taken as bearing out, on the whole, the modern nudist's contention, to the effect that bodily nakedness tends to decrease, rather than augment, sexual consciousness. This is not to say that sexual irregularities and even prostitution did not occur; but there was small occasion for the latter. Lyeurgus, however, was like Moses, in that, while he encouraged temperance, it was temperance in women rather than in men that he had in mind.

⁷³ Cf. the ancient Peruvians. The Piraeus was Athens' most noted harbor. It was joined to the city by long walls, and included the ports of Cantharus, Aphrodisius and Zea. It is now identified with the Porto Leone, or Draco.

⁷⁴ On the Athenian houses of prostitution, see Lacroix, Part i, Chapter vii.

As for the young Athenian, prostitution was a part of his education; it was, one may say, in the curriculum. Solon, it is true, had enacted a law against the seduction of the young of either sex; but the penalty was gradually diminished in severity, from punishment by death to a fine of twenty drachmas.

So far as the prostitute herself was concerned, her condition was that of a serf of the state; she was not a citizen (the "foreign" woman, again), but was compelled to submit to a heavy tax. Aside from this, she was under no special stigma, until the Areopagus, by way of protecting the free born and respectable woman, resolved to impose a distinct garb or livery upon the woman of the other sort, in the form of a "flowery" robe, or one made of flowered stuff, a variety of courtesan's apparel which we shall find continuing down the ages. This attitude toward prostitution and the public woman is somewhat reminiscent of that of the Jew; but where with the Jew the emphasis was on the family, with the Greek it was on citizenship; and the Roman is to follow in the latter's footsteps. The Jewish harlot, it will be recalled, as far back as the time of Tamar, went with her face veiled;⁷⁵ the Greek one was advertised by her gaudy dress.

The prescription with regard to dress was not the only mark of discrimination. There were certain places where a prostitute might not go. She was, for one thing, forbidden to enter a temple. On the other hand, it was no insurmountable disgrace to be the son of a courtesan, as Themistocles proved. He was even proud of the fact, and had himself drawn through the streets in a chariot to which four hetairai were yoked.

The Dieteriads, or inmates of houses, did not constitute the only class of prostitute. There were the *auletrides*, or flute-players and dancers, who may be classed as occasional prostitutes.

⁷⁵ *Genesis*, xxxviii, 15: "When Judah saw her, he thought her to be an harlot; because she had covered her face." Contrast the Mohammedan custom.

Schooled in all the refinements of vice, and with their services greatly in demand at banquets, they were by way of being the forerunner of the modern chorus-girl. Their mode of life has been anecdotally portrayed for us by such writers as Aristagoras and Athenaeus.

Then, there was the *hetaira*, bringing with her what was to become an institution within an institution, that of *hetairism*. The *hetaira*, or "good friend," was the super-courtesan, occupying the highest rung in the social ladder that it was possible for a prostitute to attain.⁷⁶ The *hetairai*, the "friends" of statesmen, generals, poets and philosophers, were the veritable queens of Athenian grace and culture, and held a queenly court. They dabbled in philosophy and other intellectual pursuits; but it was probably, when all is said, no more than dabbling. They were, no doubt, better educated and more intelligent than the ordinary courtesan; they spoke the jargon of the arts and letters, just as a Greenwich village or Montparnasse prostitute might to-day; but when we stop to think of it, we find that only a few names, such as those of Sappho, Aspasia, Leontium—only a few, out of some seven centuries of *hetairism*!—have come down to us; which leads one to wonder if their fame has not been in good part due to the glamor of distance.

Within the ranks of the *hetairai*, we are to remember, there were various gradations, those of the highest class being known as "philosophers"; while those of the third and lowest stratum, noted for their viciousness, were beneath the dieteriads in depravity. All this points the inference that a Sappho and an Aspasia were, likely, after all, the exception rather than the rule.⁷⁷

⁷⁶ The comic poet, Anaxilas, in his *Monotropos*, observes: "The woman who is restrained in her speech, yet accords her favors to those who have recourse to her for the satisfaction of their needs of nature, is known as a *hetaira*, or good friend, by reason of the good comradeship she displays."

⁷⁷ Lacroix's verdict (Part i, beginning of Chapter xii) is: "And so, we are forced to

The hetairai had at first their own place of abode, the Ceramicus, or Potters' Quarter,⁷⁸ which thus became the home of high-class prostitution, as set over against the plebeian and mercenary variety which flourished in the Piræus. The district, however, little by little lost its character, as it was progressively invaded by women of a lower class.

The hetairai are another example of the foreign woman prostitute. Many of them were *déclassé* cosmopolites, who had forfeited their citizenship. They came, largely, from the Mediterranean islands, Lesbos, Tenedos and Cyprus, and from Phœnicia; and it is not unlikely that the element of cosmopolitanism, the exotic, added to their charm.

Another institution which must be included in any survey of Greek prostitution is that of concubinage. As Demosthenes put it,⁷⁹ "We have hetairai for pleasure, concubines for daily use, and wives to provide us with legitimate children and to grow old faithfully in the interior of the home." The concubine, who stood at the very threshold of the Greek home, was a slave, bought or rented for the purpose. The matron had nothing to fear from her, since a wife's chief concern was the legitimacy of her children, and a slave could not give birth to citizens. The lawful spouse accordingly manifested no jealousy, and it would have been useless, had she done so.

This brings us to the position of the Greek wife, and her relations with her husband. For, down the centuries, we shall discover, in considering the question of prostitution, a certain significance always in the prevailing character of the marriage relationship. The Greek wife had been reduced practically to a child-bearing machine, the only other activities permitted her being the

conclude that these sweethearts of the poets, the orators, and the wise men, were nothing more than beautiful and voluptuous."

⁷⁸ There were two regions by this name, one within and one without the Dipylon or Thriasian Gates. (Liddell and Scott.)

⁷⁹ In his plea against the courtesan, Neæra (Bekker's *Oratores Attici*, 1345sq.).

arts of Penelope. Had she attempted to simulate the wiles or intellectual accomplishments of the hetaira, she would have earned for herself ridicule as well as stern reproof. Between husband and wife, there seems to have been an almost total absence of emotional relations. When the man wanted, in addition to sexual gratification, companionship of another sort, he turned to the hetaira or to boys, as generals did on their campaigns.⁸⁰ Summed up, with the exception of the hetaira, the lot of Grecian women was intellectual darkness and emotional barrenness.

The Forms of Prostitution.—We have now seen developed the principal forms of prostitution that are to be distinguished: a vestigial guest prostitution; religious prostitution, now practically extinct; and, to a degree evolving out of these varieties, a commercialized prostitution, or prostitution as pure barter, in which the medium of exchange, to repeat, is not of necessity money, and which, with Solon, becomes legalized and regulated by the state. The Italian Mantegazza⁸¹ would distinguish another form, what he terms "epicurean" or "esthetic" prostitution, particularly applicable to such a manifestation as Greek hetairism and its historic successors; but this would seem to be rather unnecessary, since prostitution properly implies barter (which, strictly, would exclude a bona fide guest prostitution), and where there is not a bartering *for something*, prostitution does not really exist. In the case of the hetairai, while they may have been "good friends," intellectual companions and all of that, there was in all likelihood a commercial basis to their relations with their admirers. The most satisfactory course would be to regard prostitution-as-barter as the definitive form, with guest and religious prostitution as primitive ones leading up to it. This, at any rate, is what prostitution means to the modern

⁸⁰ See John Addington Symonds, *A Problem in Greek Ethics, being an inquiry into the phenomenon of sexual inversion*, London, 1908.

⁸¹ *Op. cit.*, pp. 263ff.

world; and it is with the evolution of barter-prostitution, now legalized and "regulated," now semi-legal or tolerated, sometimes outlawed, that we are to be concerned from now on in this paper.⁸² It was Solon who brought in the problem with which the later nineteenth and early twentieth century has grappled, namely, the attitude of the state toward the traffic in women's bodies—in other words, the question: regulation or abolition?

Prostitution at Rome; Emotional Frigidity of the Roman; His "Light and Easy" Loves; Excesses under the Empire.—Prostitution entered Italy by way of Etruria. A religious prostitution, to begin with, it was, according to Heraclitus, established by the priests of Cybele, the worship of Priapus, of which we see depictions in the surviving vase-paintings, having been brought in from Phrygia. The early peninsular priapic rites displayed affinities with the erotic festivals of Athens and of Babylon. The close connection between religion and prostitution is brought out, when, on an old Etruscan vase, we behold a stranger paying for a woman's virtue and laying the price on the altar. What occurred was a mingling of native ceremonies with those from Egypt, Phoenicia and Greece. St. Augustine speaks of the devotions paid to Priapus and similar pagan divinities.

Even that Roman history which every school-boy knows is given a different and erotic reading by the old historian, Valerius, as cited by Aurelius Victor, Aulus Gellius, and Macrobius. The "wolf," for instance, which, tradition says, suckled Romulus and Remus, is made out to have been none other than the prostitute wife of the shepherd Faustulus, Acca Larentia by name, whose feast, the Larentalia or Accalia, the Romans were later in the habit of celebrating in the month of December, a rite believed to be of Etruscan origin.⁸³ In any case, it is certain that *lupa*,

wolf, became a common term for prostitute; and Macrobius would have it that this is the historic source of *lupanar*, bawdy-house. All of which goes to show that the public woman was a prehistoric institution in Italy; and in after ages, she kept her place at religious festivals, the Floralia, the Lupercalia, the Isiaca, or Festival of Isis, etc., as is apparent from the pages of Juvenal, Apuleius and others.

The Roman prostitute was of two sorts, the one who roamed at large, and the one who was shut up in a house. A true hetairism never became established at Rome; it did not seem to be compatible with the temperament of the male Roman. At the best, there were but distant imitations or approximations, as in the case of the fashionable prostitute, who corresponded roughly to the second-class hetaira at Athens.⁸⁴ But the Roman courtesan still had a better time of it than did the Roman wife, who was a citizen, but a connubial slave. She appeared at the theatre and games, which the wife dared not do, and led a wider, freer existence in more ways than one.

With it all, she was ever under a strict police supervision. Registration and licensing, of which the aediles were in charge, was a rigid requirement. Each prostitute must possess the *licentia stupri*, antecedent of the "Yellow Ticket"; and failure to register or pay the fee according to Justinian entailed a heavy fine and expulsion from the city. Brothels were not permitted to open before three o'clock in the afternoon, and must be closed by one in the morning. Regulations regarding costume were also strenuously enforced.

In addition to the housed prostitutes and others directly under police supervision, there were at Rome a number of *erratica scorta*, or vagrant women, who did not interest the authorities particularly, save when a crime in which they might be implicated had been committed. Prostitutes of the lowest class were carefully watched in this respect.

⁸² Felix Regnault, *L'Evolution de la prostitution*, Paris, 1906.

⁸³ Aulus Gellius, 6, 7.

⁸⁴ Cf. the "*bonum meretricium*" (q. v.).

Occasional prostitution, at Rome as in Greece, was to be met with among the dancers, flute-players, and their kind, the *saltatrices*, *fidicinae*, *tibicinae*, etc. These were mostly foreign women, from Egypt or Asia, and the police kept a wary eye on them.

The number of strata in Roman prostitution is indicated by the numerous Latin terms for prostitute, each hinting at a different social level, habitat, or mode of life. These terms are highly revealing for the history of prostitution in the city of the Caesars, and of prostitution in general. As it would take too long to go into them here, the reader may be referred to another article in this work.

The locale of Roman prostitution provides another interesting study. Barber-shops,⁸⁵ bake-shops, wine-shops (the *tabernae meritoriae*), inns (*cauponae*), lodging-houses (*deversoria*), all were, or came to be, the prostitute's favored haunts.⁸⁶ The baths were another resort, as Juvenal and Ovid let us see. So were the *fornices*, the arches or vaults of the Circus, which have given us our word, *fornication*. The women sometimes lived in tents near the Circus. The conditions that may be envisaged remind one strongly, in many respects, especially as regards the taverns and lodging-houses, of early-century conditions in New York City, under the old Raines Law and the system of "police regulation," conditions such as will be found described in the New York Committee of Fifteen report, prepared in 1902,⁸⁷ or in the Kneeland study.⁸⁸

The early Roman republic had known a certain puritanical austerity in matters of sex, an attitude personified by Cato the Censor. It is as the Christian

era draws near that things begin to change, until, in the Augustan Age, we find the leading poets of the time, Horace, Catullus, Tibullus, Propertius, Ovid and Martial, becoming, often, the chroniclers of prostitution, as the poets of fifteenth and sixteenth century France were to be, and reflecting in their work that erotic depletion and insatiable passion for promiscuity which is the stigma of sexual life in Imperial Rome. Horace's "light and easy" loves (the "*Cupido sordidus*") are the fashion of the day; and it is the author of the *Odes* and *Epodes* who pictures for us the witch-doctors of love, the *sagae*, with their philtres, their charms and spells, their gruesome, obscene and grotesque rites.

Then come the orgies of the Emperors, or which we may read in Suetonius and elsewhere, the baths, the banquets (the *comissationes*), the dinners of a Trimalchio as described by Petronius, the *fellatores* and *fellatrices*, the corrupters of infants, etc., etc., with the Emperor, in the person of Caligula, instituting a *vectigal*, or prostitute's tax, on the one hand, and on the other, turning his own palace into a combined brothel and gambling-house. Until Salvianus, the fifth century Christian, could observe that the distinction between the decent woman and the prostitute had been absolutely obliterated.

The status of the Roman wife was not greatly different from that of the Greek matron. Roman marriage, especially as symbolized by the *confarreatio*, was a bond replete with dignity; but the wife's sphere was limited still to child-bearing and the affairs of the home, lighter amusements and intellectual pursuits being forbidden her; nor was there any more of an amorous-emotional relation between husband and wife than there was with the Greeks. The Roman male's attitude toward sex in general, whether represented for him by wife, concubine, mistress or courtesan, is one marked by a deliberately cultivated emotional frigidity, as with the poet, Horace, who confesses that he pre-

⁸⁵ Cf. the part played in modern prostitution by massage and beauty parlors, manœuvre shops, etc.

⁸⁶ See EROTIC TRADES.

⁸⁷ *The Social Evil, with special reference to conditions existing in the city of New York; a report prepared (in 1902) under the direction of the Committee of Fifteen*, New York and London, 1912.

⁸⁸ *Op. cit.*, note 34, above.

fers intercourse with prostitutes to the bother connected with liaisons of another sort. This shunning of a deeper emotional basis, coupled with a sexual over-vitality, if anything, goes a considerable way toward explaining the trend of later Roman civilization.

We have had, now, a view of prostitution down to, and for some little distance beyond, the coming of Christianity.⁸⁹ It was a sexually exhausted, at once satiated and depleted world that the first Christians knew, one in which, to employ the words of St. Paul, "chambering" and "wantonness" were rife, along with sodomy, bestiality and every manner of perversion; it was one in which the original cosmogonic principle of Eros had long since given way to the *Erotes* and *Cupidines* of an unveiled lust.⁹⁰ What would this weird new evangel out of a Judean manger, with a crucified God, have to say to it all? How would it be affected by the world it had to confront? What would it have to offer to womankind? What would its verdict be on the question, already ages old and sufficiently beset with thorns, of the traffic in human lust?

Prostitution in the Middle Ages; Attitude of Roman Law and Christianity; Prostitution and the Problem of Evil; St. Louis' Attempt at Abolishment; Effect of the Crusades; Women, Chivalry, and the Clergy.—With prostitution strongly entrenched, Christianity came with a new stress on the dignity of the soul of man, and upon the human body as the soul's temple, which was not to be defiled. The early Christian Emperors proceeded to subject prostitution to certain modifications; but their efforts were none too successful. Con-

stantine is a case in point. About all that he was actually able to accomplish was to forbid the sale of Christian slaves for purposes of debauchery. He also made unnatural vice punishable by death. Theodosius the Younger partly abolished the *vectigal*, and in accordance with his enactments, keepers of houses were first to be lashed and then expelled from the city. But at best, this did not stamp out individual prostitution. The Theodosian Code was in force down to the end of the Middle Ages, being rigorously applied by Justinian. Theodosius' successors made few additions; they were, for the most part, content with increasing the penalties for violations, which were becoming all the time more frequent.

A good approach, if one wishes to grasp the spirit of the Roman law in the matter, is to observe its wavering attitude toward the question of a prostitution tax. Theodosius II. had suppressed the tax on procurers, and had denounced the negligent policy of his predecessors in this regard.⁹¹ Yet, the courtesan still paid her tribute. As far back as the reign of Alexander Severus, the *vectigal* had been hypocritically transformed into a "lustral" or "purification" tax. This has reference to the Roman custom of offering a general purification sacrifice at the end of every *lustrum*, or five-year period, at the close of the census-taking.⁹² The *aurum lustrale* was a tax levied, not only on brothel-keepers, but also on petty shop-keepers, usurers, etc.,⁹³ but it came to be thought of especially as a tax on prostitution, the idea being that the money taken in by the state from such a source was to be "purified" through its employment for public works. Un-

⁹¹ Prolegomena to the *De Leonibus*, A.D. 439.

⁹² This was offered by the censors for the people. The offering consisted of an ox, sheep, or swine. Cf. Livy, 1, 44, etc. The *lustrum* was sometimes omitted; see Livy, 3, 22, etc.

⁹³ On the *auri lustralis coactor*, or collector of the lustral tax, see the *Institutiones Gruteri*, 347, 4. *Collatio lustralis: Codex Theodosianus*, 13, tit. 1. *Lustralis*, as term for collector: *Institutiones Fabretti*, p. 426, n. 458.

⁸⁹ On the general question of prostitution in antiquity, see Iwan Bloch, *Die sexuelle Frage im Altertum und ihre Bedeutung für die Gegenwart*, Referat, gehalten auf dem Internationalen Kongress für Mutterschutz und Sexualreform, in Dresden, am 29 September, 1911, Berlin, 1912. See also Edmond Dupouy, *Prostitution in antiquity; its connection with venereal disease, a study in social hygiene*, Cincinnati, 1895. With the latter, cf. the article referred to in note 52, above.

⁹⁰ See LITERATURE AND LOVE.

der the Christian Constantine, this was known as the "*chrysargyrium*," or "gold and silver" revenue.⁹⁴ The distinction between the *aurum lustrale* and the *chrysargyrium* was one of name, chiefly. And we hear the first of the Christian Emperors being reproached by the Greek historian, Zosimus, for having added to the prostitute's burden.

Finally, in the reign of Anastasius, the *chrysargyrium* was definitely, and dramatically, wiped out, with a public burning of the charters of authorization. Wiped out? It still lingered on, down to Justinian's day, although the latter carefully avoids specifying it in the tax regulations.⁹⁵ The general attitude of Justinian was a lenient one; and in this, there has been seen the influence of his wife, who was an actress.

The Roman law was to provide the basis for the regulation of prostitution throughout the greater part of Europe. Down to the Council of Milan, the canonical legislators made no additions to the Justinian corpus. The truth is, the Church consistories tacitly accepted prostitution as a necessary evil, one which must be endured, if greater ones were to be obviated. The tendency of the whole question was to become merely part of a larger Problem of Evil in a God-created world, a problem with which Aquinas was to wrestle. St. Augustine's position on the question of prostitution has become famous: "Take the prostitute out of human life, and you leave everything a prey to the whirlwind of passion; put her in the matron's place, and you bring dishonor and disgrace upon the latter."⁹⁶ (We have here, again, the thought of the respectably married or "good" woman.)

It was at the Council of Milan, in the episcopate of St. Charles Borromeo, that an article dealing with prostitution was introduced into the text of the Ap-

ostolic Constitution,⁹⁷ one that was reflective of the jurisprudence of Theodosius and Justinian.⁹⁸ By this new provision, the bishops of Christendom were commanded to watch over the costume, the haunts and habitat of the *Meretrix*, and to see to it that the courtesan's abode was removed from the cathedral and the frequented quarters. "This police measure is especially recommended to the enlightened piety of princes and magistrates." Those who practised the trade of procurer were to be expelled. The trend of the ordinance, in short, is in the direction of state regulation of prostitution, with an ecclesiastical-sanction.

It is interesting to compare that continence preached by Paul with the Church's developing attitude toward the state and the prostitute. It is true, the earlier Church had prescribed excommunication for those fathers or mothers who sold their own daughters for lustful purposes, and for all those who plied the *lenocinium*; but when all is said, the Church came no nearer than did the Roman codices to outlawing the fact of prostitution. It merely displayed a forgivingness toward the Magdalen, by providing that the ex-prostitute, married to a Christian, was to be received into the community of the faithful;⁹⁹ and it also enacted a penalty of eternal excommunication for the doing away with offspring born out of wedlock.

There is a sense in which the Middle Ages may be said to have begun in Gaul, with the mingling of Roman civilization and northern barbarism. The Gauls, as we have seen, were not addicted to guest prostitution; and there was equally no place for religious prostitution in Druidism. The manners of the tribesmen of northern and western Europe were, on the whole, fairly pure. Readers of Caesar's *Gaulic War* will recall the passage on the morals and customs of the ancient Germans; the habit, for instance,

⁹⁴ The Greek word, a dubious one, is given by lexicographers as meaning a gold-mine.

⁹⁵ *Corpus*, Bk. x, section 19.

⁹⁶ "*Aufer meretrices de rebus humanis, turba veris omnia libidinibus; constitue matronarum loco, labe ac dedecore dishonestaveris.*"

⁹⁷ *De meretricibus et leonibus*, tit. 65.

⁹⁸ A translation will be found in Lacroix, Part ii, Chapter vi (end).

⁹⁹ Council of Toledo, 750 A.D.

which the sexes had of bathing nude together in streams. This rigidity was to be relaxed with the coming of the Roman legions; but up to their appearance, prostitution was not tolerated. The Franks were particularly hard on the woman taken in adultery, whom they punished with death. Such prostitution as did exist took the form of concubinage and polygamy. Charlemagne is an illustrious example, with his four wives and half-dozen concubines. It is worthy of note that the Salic Law contained no provision on the score of prostitution.

It was with the ordinance of Louis VIII of France that prostitution achieved recognition by the north-European state; and it was under Philippe-Auguste that the *Roi des ribauds*, or Master of the Revels, in reality a superintendent of prostitutes, came to court. It was not long before prostitution was rife in the convents and monasteries, as evidenced by a letter of St. Boniface to Pope Zachary; while such crimes as infanticide and bestiality, by common report, were of almost daily occurrence. The state's efforts, meanwhile, were confined to the restriction of brothels to certain streets and quarters, and to the collection of the prostitution tax. From all of which, it may be seen that state "regulation" was well under way before the time of St. Louis (Louis IX).

When France's saintly king returned from the Crusades, he at once set about the combating of prostitution, with the weapon that seemed to him most effective and heaven-sent, namely, religion, backed by the might of the state. He was determined that the scourge, for as such he envisaged it, should be wiped out once and for all; and in December, 1254, we find him issuing a decree abolishing prostitution and banishing prostitutes. There is observable in St. Louis' attitude much of the spirit of the modern Calvinist or other Protestant reformer, who turns to the state as a means of making men righteous by law. We have in him, really, the pre-

cursor of the contemporary vice-commissioner.

The pious monarch's successors were far from being so strict as he, and prostitution continued to flourish. The Courts of Miracles provided one asylum for it. Any one who would see just how widespread and deep-rooted prostitution was in the later Middle Ages has but to inspect such a work as the thirteenth-century *Dit des rues de Paris*,¹⁰⁰ or to peruse such a poet as François Villon. Every woman, legally, was looked upon as free to dispose of her body as she might see fit; it was with the topography of prostitution that the law was principally concerned. The supervision of prostitutes and their abodes was one of the chief functions of the Provost of Paris (cf. the Roman aediles); and official tyranny and corruption were frequent. Such repressive measures as were taken, the occasional prosecution of procurers and procuresses, etc., did little more than scratch the surface, in effect. In the provinces, prostitution was regulated by local custom.

In connection with Provençal prostitution, there is that curious institution, a public brothel in Avignon, founded by the erring Queen of Naples. Lacroix (part iii, Chapter xvi) quotes the Provençal text of the statutes of this establishment. Certain points are of special interest, such as the prescribing of the red aglet on the prostitute's left shoulder (See AGLET.), the medical inspection of prostitutes, the forbidding of infanticide, and the exclusion of Jewish patrons.¹⁰¹ The date of the ordinance is August 8, 1347. It is striking to find in it the essential features, including police intervention in brawls, cases of theft and the like, which are to be encountered in modern French prostitution, as vividly portrayed in such a work as Roberti's *A la Belle-de-nuit*.¹⁰²

In any consideration of prostitution in the later Middle Ages, the influence of the Crusades must be taken into ac-

¹⁰⁰ The work is by one Guillot; it was published in 1754, by the Abbé Lebeuf, from a manuscript discovered at Dijon. See Lacroix, Part iii, Chapter x.

¹⁰¹ This sexual ostracism of the Jews was common. Cf. the Venetian documents referred to in note 19, above.

¹⁰² See note 19, above.

count. These campaigns in distant lands, involving the prolonged absence of the fighting male, had much the effect that war always does, or such as is provoked, in general by the separation or partial separation of the sexes and by enforced living (as in prison) under unnatural conditions. As a result, each crusaders' camp is said to have had its brothel. Geoffrey, monk of Vigéois, reports a total of 1,500 concubines following the royal army in the year 1180. A similar report is given us by Commynes, of the camp of Charles the Bold, Duke of Normandy, in 1475.

Chivalry, the sum of it is, with all of its romantic and often artificial exaltation of womankind, had failed to remove, or even notably to diminish, the greatest stain on the sex's honor, prostitution. For the ideal of chivalry remained, very largely—an ideal. Had not the *troubadour* been followed by the *trouvère*, whose song, in a society that made marriage a purely economic institution, was a veritable hymn to adultery?¹⁰³ And so, in spite of the wearing my lady's favor and the doing of high deeds in her name, a process of degeneration had begun by the time of Charles VI (1368 or 1380 to 1422), until Louis VI's court preacher, St. Jean de Grève, bursts forth into Jeremiah-like thunders against the conditions of his day.

The clergy, in the meanwhile, had fostered a contempt for the sex. To them, woman was an "all-engulfing hell";¹⁰⁴ she was a *far satana*, a "brand of Satan" and the "gate of hell." This attitude was not, precisely, a new one. It may be traced back to Valerius' epistle, for a long while attributed to St. Jerome, the *De conjuge non ducenda*; Tertullian had indulged in philippics against the weaker vessels, and Origen had had his doubts as to woman's soul. Then came the student Goliards, or *Vagantes*, who, with their pothouse in-

clinations, went the clerics one better. The upshot was a body of medieval satire, directed at woman's defenseless head, which left her scarcely a shred of any virtue whatsoever.¹⁰⁵

The Renaissance is now in the offing; and again we may ask, what has it in store for woman? What will it say to prostitution? The first flush of the new dawn is to be seen in that revival of human feeling, which is what it amounted to, that began with St. Francis of Assisi. Then came Éléonore of Aquitaine and Christine of Pisa and their sisters, forerunners of feminism, finding a poetic expression for their novel view of woman's world. It is not, however, until the full morning of the Renaissance, with Marguerite of Navarre and her brilliant contemporaries, that woman in truth begins to come into her own, through the discovery that she has a mind, as well as a body and a grudgingly bestowed soul. Can even this obliterate man's old, old insult?

Prostitution in the Renaissance; Platonism, the New Conception of Woman and Love; Courtly Prostitution and the Renaissance Courtesan; Catherine de Medici's "Flying Squadron"; the Problem Is Complicated by Venereal Disease; a Step toward Abolition; Appearance of the "Kept Woman"; Attempt to Make Prostitution "Safe."—As had been the case when Christianity came upon the scene, the Renaissance found prostitution in full blast. Nevertheless, and in spite of the exciting picture of prostitution which the Renaissance may be found, or may be made, to afford, a change was in the air and was working fast. The conception of woman might still be very much that of the Middle Ages, as summed up in the words *fragilitas, imprudentia, imbecillitas*, or "Frailty, imprudence, silliness," and woman might be yet, in the eyes of the average man, the "silly light-headed creature" which Plato, on occasion, had found her to be; but the

¹⁰³ Cf. Marie de Champagne: "*Gens mariés Ne se peuvent bien loyaument Entr' aimer.*"

¹⁰⁴ "*Femme est enfer qui tout reçoit, Toujours a soif et toujours boit.*"

¹⁰⁵ See *La satire des femmes dans la poésie lyrique française du moyen âge*, par Théodore-Le Neff, Paris, 1900.

doctrine of that same Plato was in the end to alter woman's destiny, as is rendered strikingly evident with Marguerite of Navarre. In Italy, home of the Renaissance, Platonism was to lead to a new conception of love, and of woman's rôle in love and in life; and this view, favored by the Italian wars and the inevitable conquering of the conqueror, was to make its way northward beyond the Alps, to be acclimatized at such little courts as that which Louise of Savoy kept, at Cognac and at Amboise, in the atmosphere of which Francis I and his sister, Marguerite, were reared. And it all was to come to a lustrous fruitage in that scintillating "*cour des dames*" which Louise's son, the *Roi-chevalier*, was soon to establish.

As we look over the sixteenth and seventeenth centuries, there would seem to be little change apparent at first. The period from Francis I to Louis XIV would seem to present, if anything, the spectacle of a sex-ridden era, with the vices of a nation concentrated in the glaring light of the court, and with philandering monarchs providing spicy material for the salacious biographer. This impression is corrected somewhat, when we remember that it is in no small part due to the recent invention of printing, with the consequent greater diffusion of chronicles.

The fact of the matter is, if we survey carefully the entire field, we shall end by perceiving that, with the Renaissance epoch, prostitution in reality enters upon a decline, in the sense that its graph, so to speak, from then to the present, is a prevalingly downward one; it is like a fever that is slowly, all but imperceptibly, but none the less surely, subsiding as a result of the efforts that are made to cure it. A statement like this may sound a trifle strange, when one reflects upon the licentious character of the theatre in the sixteenth and seventeenth centuries, attaining for English readers a well known peak in Restoration comedy; for it is almost always safe to take the theatre as indicative of the morals of a

people or an age. There are, nevertheless, certain straws in the wind. One of these is the fact that the last of the *Roi des ribauds* lived in the reign of Francis I. He was replaced by a "*dame des filles de joie suivantes la cour*." Prostitution still exists at court, as we may see from the royal account-books of the period, the allowance made for the upkeep of the *filles de joie*; but it exists a little less brazenly than had been the case before.

The problem is now complicated by the sudden appearance, seemingly and mysteriously coinciding with the discovery of America, of the dread plague of syphilis over Europe, the responsibility for which, in the names they gave to the disease, the nations were to bandy back and forth among themselves. As a result of the Italian wars, with which the advent of the syphilis also coincided, the French blamed it on the Italians, and the Italians on the French, etc. Francis I was a victim of this scourge, according to the assertion of Brantôme and others, which there is good reason for accepting; and the "plague" or the "pox" continued to rage, with an increased intensity, during the reign of Henry II.

Meanwhile, amid the intellectual splendor and the worldly pomp of the Renaissance era, the courtesan has been elevated often to a pinnacle, reminiscent of the place she occupied as an hetaira at Athens, or at the side of the Pharaohs of Egypt. Intellectual accomplishments as well as beauty are frequently hers, and she upon occasion has no little to do with the direction of the glittering world that surrounds her. A mere list of names of the well known courtezans of the period, most of them no more than names now, would require pages. At Venice, Aretino, Titian and men of similar quality keep their company, and ladies of light virtue are the intimates of popes and cardinals, kings and emperors. It was under Catherine de Medici that prostitution was definitely organized as a political tool, in the form of that "flying squadron" of maids of

honor which Brantôme has described.

With such facts as these in mind, we may appreciate the consternation that ensued, when Charles IX (1560-74) suddenly decreed that the statutes of St. Louis should be enforced. This step, an important one in the direction of the legal abolition of prostitution in modern times, had the effect that the revival of a dead-letter law of the sort usually does. It was not effective for a good while; and most people believed that it was impossible to enforce such a system in a large city like Paris.

Conditions continued much as they were before, down to the reign of Louis XIV, when, as a result of the ever-growing fear of venereal disease, prostitution, at least of the Parisian brand, may be said to have entered upon a new phase, with the appearance, as a recognized and thoroughly grounded institution, of the modern "kept woman," who as the *maîtresse* has since made so firm a place for herself in French life and in French psychology. The mistress, the "*mignonne*," or "sweetie," came as a substitute for the brothel or other forms of prostitution that carried with them a greater peril; and it was not long until the phrase "*entretenir une femme*," along with "*petite amie*," "*bon ami*," etc., became a part of daily speech. The kept woman of this kind, it is to be noted, had a higher social position than did the ordinary prostitute, her status being more nearly equivalent to that of the concubine of old.

With the outbreak of the French Revolution, all preoccupation with the control of prostitution was lost for the time in the graver issues of the day, as commonly happens in case of war; but prostitution itself continued to flourish, not only in France but elsewhere. T. Vernor has left us a tract picturing its "alarming increase" in London at the close of the eighteenth century.¹⁰⁶

The dread of venereal infection, in the interim, from the seventeenth century

on, is proving more efficacious than morals in bringing pressure to bear for the "regulation" of the traffic in women; a new spirit is evident behind the drive for state control; there is a feeling now that supervision must be, not merely moral, but *sanitary*, an attitude which was to spread throughout Europe in the course of the Napoleonic Wars, which left a syphilitic trail behind them. This point of view crystallizes in the attempt, in 1825, on the part of the Société Belge des Sciences Naturelles, to introduce a continent-wide system of sanitary regulation, an effort that is repeated at the International Congress of Hygiene, meeting in Brussels, in 1852.

The thought behind these tentatives is, that prostitution must be made "safe," i.e., sanitary, for the protection of society at large. To the rigid moralist, there is a certain pusillanimity in such a point of view, and this criticism is to be voiced ever more loudly as the abolitionist movement, which starts about the middle of the nineteenth century or a little after, gains impetus. The attitude of England, for instance, is significant. She steadily refused to adopt regulation in the United Kingdom; but with that moral nonchalance which is characteristic of British imperialism, she unhesitatingly put it into effect in her colonies; and in 1864-66, we find her enacting special legislation on the subject.

Before taking up the abolitionist movement, which lasts over into the present century, the reader may be desirous of forming an idea of the status and extent of nineteenth-century prostitution; in which case, there are certain works to which he may turn. Guyot's *La prostitution*, published at Paris (1882), is one. Jeannel's treatise on prostitution in large cities during the century, with special reference to venereal disease, is another.¹⁰⁷ F. J. Behrend's *Die Prostitution in Berlin* (Erlangen, 1850) will give the German picture. With the last mentioned work may be read J. E. Kühn's *Die Prostitution im 19 Jahrhundert*,¹⁰⁸ and Alfred

¹⁰⁶ *The Evils of adultery and prostitution; with an inquiry into the causes of their present alarming increase, and some means recommended for checking their progress*, T. Vernor, London, 1792.

¹⁰⁷ J. F. Jeannel, *De la prostitution dans les grandes villes au dix-neuvième siècle et de l'extinction des maladies vénériennes*, Paris, 1874.

¹⁰⁸ Fourth edition by Edw. Reich, Leipzig, 1892.

Blaschko's work of the same title, as well as the latter's *Die Verbreitung der Syphilis in Berlin* (Berlin, 1892). For prostitution in Vienna at the end of the century, see Schrank.¹⁰⁹ In Russia, one of the centers of prostitution was the Nizhni Novgorod fair.¹¹⁰ For prostitution in England in the middle of the century, there is Acton's treatise¹¹¹ (1857); and Commenges (1897) gives us a study of clandestine prostitution in the French capital.¹¹² Works such as these enable us to form a fairly comprehensive and accurate idea of conditions that met the early abolitionists' gaze. In almost all of the tracts and volumes that saw the light during the period is to be found an accent on the sanitary aspect.

A revulsion against this view was, however, not long in coming. The feeling soon became widespread that state recognition, in the guise of a regulation implying a toleration, of prostitution was a blemish on civilized society, just as was African slavery; the "white slave," like the black, must be freed. As a result, two camps were formed, composed of the "abolitionists" on the one hand and the "regulationists" on the other. The question was debated in medical congresses, and partial reforms were from time to time adopted.

Among the leaders of the regulationists in America were two physicians, J. Marion Sims of New York and Samuel David Gross of Philadelphia. But efforts to put a system of state supervision into practice did not prove highly successful. The experiment was tried in New York City, from 1867 on, and in St. Louis, Missouri, from 1870-74. It was abandoned in the latter city (1874), although an unsuccessful attempt to revive it was made two years later, when it was found that public sentiment was decidedly opposed to the municipality's having anything to do with the commerce in vice. During the four years from 1870 to 1874, there was a similar and vigorous movement for sanitary control in Chicago.

¹⁰⁹ *Die amtlichen Vorschriften, betreffend die Prostitution in Wien*, von Joseph Schrank, Vienna, 1899.

¹¹⁰ See *La Prostitution à la foire de Nijni-Novgorod*, par Mme. Z. Eltziva, Paris, 1894. Also: *La Prostitution en Russie*, par Louis Fiaux, Paris, 1895.

¹¹¹ W. Acton, *Prostitution, considered in its moral, social and sanitary aspects, in London and other large cities; with proposals for the mitigation and prevention of its attendant evils*, London, 1857.

¹¹² Commenges, *La Prostitution clandestine à Paris*, Paris, 1897.

Here, the state legislature finally stepped in and cut matters short. There was likewise a campaign in the District of Columbia to procure federal enactments looking to regulation, and this was watched with considerable interest by the country at large, for possible national implications; but it did not come to anything. Among other American cities which experimented with regulation and found it a failure may be mentioned San Francisco, Philadelphia, Pittsburgh, Baltimore, Cincinnati, Detroit, St. Paul and Denver. After this, the idea fell more and more into disrepute.

Animated by a constantly increasing sense of the social welfare, many of those concerned with the problem felt that it was more than a simple question of prophylaxis, and this feeling was beginning to take root in the public at large. Modern woman, in particular, sharing with man the benefits of a higher education and enjoying an ever greater degree of sexual equality, was convinced that the sanitary aspect did not cover her rights in the case; and hence it is that we find the question being associated, during the years to come, with that of feminism and the suffrage. It is worthy of note that the leaders of the abolition movement, in Europe and in America, were in large part women.¹¹³ And if prostitution has, indeed, been to any degree abolished in the western world, this has been due in no small part to that housecleaning and housekeeping (an *economy*, in the etymologic sense of the word) which modern woman has taken upon herself, in connection with the fight for her sex's rights, including those of the prostitute and other socially submerged types.

We are back once more, it may be seen, at what would appear at first

¹¹³ *Prostitution und Frauenbewegung*, von Dr. Friedrich Scholz, Leipzig, 1897; *The Slavery of Prostitution, a Plea for Emancipation*, by Maude E. Miner, New York, 1916; *Women's Suffrage and the Social Evil*, by Reginald John Campbell, speech delivered on December 17th, 1907, under the auspices of the Men's League for Women's Suffrage, London, 1907; *The Great Scourge and How to End It*, by Christabel Pankhurst, London, 1913; *Wie bist du, Weib? Betrachtungen über Körper, Seele, Sexual-leben und Erotik des Weibes, mit einem Anhang: Die Prostitution*, von Bernhard A. Bauer, Vienna, 1925.

glance to be a revival of the old moral attitude; but when we look at it closely, we perceive that the morality is no longer, as formerly, one inspired by theology—in fact, *moral*, with its clinging connotations, is hardly the adjective to apply to the new point of view, which is, rather, *social* in genesis—a social morality, if you like. And it is interesting to observe the medical profession, which at first, not unnaturally, had been inclined to favor a sanitary supervision, little by little coming around to the broader concept.

The struggle against state control in America may be taken as dating, roughly, from the year 1876. From 1895 on, we see associations being formed for the combating of regulation. Among these were the American Vigilance Association and the American Purity Alliance, the latter, in 1914, to be merged with the American Association for Sexual Hygiene (founded in 1910), as the American Association for Social Hygiene (note the transition from “sexual” to “social”). It was early-century conditions in New York City which led to the organization of the Committee of Fifteen (later, the Committee of Fourteen), and which in 1905 resulted in the formation of the Association for Sanitary and Moral Prophylaxis. An idea of those conditions may be had from the report which was prepared in 1902, under the direction of the Committee of Fifteen.¹¹⁴ With its host of panderers, its white slave traffic practically untouched by the police, and, in general, a prostitution that evaded all bounds, finding refuge, especially, in cheap hotels and lodging houses, the American metropolis presented a picture which, as has already been pointed out, is not unreminiscent

of conditions in ancient Rome.

Much of this was due to the weakness of the old Raines Law. In 1910, we have the formation of a special grand jury, with John D. Rockefeller, Jr., as its foreman, followed by a six months' investigation. The special grand jury brought in its report in June, 1910, recommending strenuous measures against the middlemen of prostitution. Among other things, it advised that massage and manicure parlors be placed under state sanitary control (cf. the barber shop as a center of prostitution in other times). It also recommended the surveillance of children at motion picture shows, etc.

In September, 1910, the more rigorous Page Law was enacted; but it was found to be merely another attempt at state regulation, and aroused a storm of energetic protest, led by the Society for Sanitary and Moral Prophylaxis. The repeal of the new measure was demanded, but this was not necessary, as the law was later held unconstitutional. In 1911 came the Bureau of Social Hygiene, established under the leadership of John D. Rockefeller, Jr.; and it was under the sponsorship of this institution that Flexner began his Continental survey, published in 1914.

An idea of prostitution in the American mid-west at about this time may be had from the 1911 report of the Vice Commission of Chicago, which may be compared with the New York Committee of Fourteen's report of 1910 or the Committee of Fifteen's report of 1912,¹¹⁵ and with such works as E. A. Bell's *War on the White Slave Trade* (Chicago, 1909), O. E. Janney's *The White Slave Traffic in America* (New York, 1911), and William Burgess' *The World's Social Evil* (Chicago, 1914). There are, also, the Kneeland report, to which allusion has been made, and the *Medical Record's* study (by Flexner) of prostitution in New York City (1913).¹¹⁶

As to that Europe which Abraham Flexner went to study, from the point of view of prostitution, we have an interesting document in the report (1914) of an aldermanic committee sent by Mayor Carter H. Harrison of Chicago, for the purpose of making a similar survey.¹¹⁷

¹¹⁴ See note 87, above. It may be of interest to compare the ordinance of Pécs, Hungary, of about the same date: *Szabályrendelet a prostituczióról*, Pécs, 1904. For prostitution in Switzerland at the same period: *Die Prostitution in der Schweiz*, etc., von Theodor Weiss, Bern, 1906. On the subject of prostitution in Germany, see R. Hessen's *Die Prostitution in Deutschland*, München (without date).

¹¹⁵ Note 35, above.

¹¹⁶ Note 34, above.

¹¹⁷ *Control of Vice Conditions in European Cities*, observations by Alderman Willis O.

There is Douglas McMurtrie's study, purporting to cover the same ground, which appeared in the same year as Flexner's.¹¹⁸ A study of *The Status Present of the Prostitution Question* (Washington, 1913) was the outcome of the International Congress on Hygiene and Demography, held in Washington, D. C., in 1912. For a German view, with reference to sanitary-legal regulation at this period (1912), see Dr. Stephan Leonhard's essay, previously mentioned;¹¹⁹ and Mehr's treatise may also be cited again.¹²⁰ For conditions in various European cities prior to the War, there is the work of Chéry.¹²¹ It is at this period, too, in Hannover, that Haldy is making his juridical study of the prostitute's dwelling-place.¹²² In June of 1913, the eleventh Congress of the International Abolitionist Federation is held in Paris, and Miss Wilson reads her paper on the economic causes of prostitution.¹²³ These references are here re-assembled for the benefit of the reader who may wish to construct, from works of the period, a conception of the state of prostitution, in Europe and America, just before the War, which is the period to which the Flexner report has reference.

That report was published in book form, in America and in England, and was translated into a number of languages. In it, the author discusses the question as to whether or not prostitution is socially necessary, the psychological impulse behind it, and the problem of reducing its ravages through education, especially sexual education. The motives and effects of state control and police supervision are duly inspected in the course of the book.

At this point, something should be said as to the form which tolerated prostitution had come to assume in America, namely, the custom of the "segregated district," popularly known as the "red-light district," the "levee," etc. For that segregation is but a species of police regulation, cannot be denied. The thing is not new. We have watched Solon, some centuries before Christ, confining the lower-class Athenian prostitutes to the Piræus, and we have heard Church councils legislating to restrict the *mertrix* to certain quarters of the town, distant from the cathedral and

the respectable centers of the population. In the United States, segregation had come to be looked upon as indispensable to the public welfare and order, the argument being that, if it were abolished, the prostitutes would invade family residential sections. Once more, the ages-old attempt to protect the modesty of the "good" woman and to preserve the purity of family life.

The segregated district was at its height in the early years of the present century. In 1904, every large American city had such a district to show. An indication of the amazing, almost breath-taking rapidity with which state recognition of prostitution was done away with, in the course of the following decade, is the fact that, by 1919, two hundred leading cities had closed their "districts." A good example here is Chicago and its "Twenty-second Street district," in the old William Hale Thompson days. The War doubtless had something to do with all this, as it did with prohibition; but the change was in the air at the time the War began in Europe, in 1914. The point is, that in an age of less rapid social movement, such a reform would have taken decades or even centuries.

Medical science, all this while, had been occupied in discovering and isolating the bacillus of syphilis and in devising a more effective treatment for the venereal plague.

This brings us down through the War epoch. The War induced a relaxation of manners and of morals, at home and abroad. The doughboy's "battle of Paris" has long since become famous, and we have the documented treatises of two French physicians to confirm the legend, if confirmation be needed.¹²⁴ The Gallic capital became, for the moment, something resembling a great Allied brothel. But the War did one thing, at least; it afforded, as has been seen, an opportunity for the study of the prostitute, her mentality and reactions, as thrown into relief by a time of tense social crisis.¹²⁵

Conditions to-day,¹²⁶ it may be stated, in the leading European cities other than Paris, are vastly different from what they were twenty or thirty years ago. There is a strict legislation against

Nance and Alderman Ellis Geiger, embodied in a report to Hon. Carter H. Harrison, Mayor, Chicago, 1914.

¹¹⁸ Note 37, above.

¹¹⁹ Note 39, above.

¹²⁰ Note 38, above.

¹²¹ Note 40, above.

¹²² Note 41, above.

¹²³ Note 18, above.

¹²⁴ Note 42, above.

¹²⁵ Note 17, above.

¹²⁶ Cf. Cortes, note 45, above.

prostitution in England (though it has not succeeded in abolishing the prostitute in London), in Norway, in Denmark, in Holland, and in Switzerland. In Norway, the keepers of houses and pimps are liable to two years' imprisonment. In Denmark, the legislation dates from 1906. The habitual prostitute is there treated as a vagabond, and houses of prostitution and places of assignation are illegal. Holland is noted for its rigorous law against streetwalkers. In Switzerland, the law differs in the various cantons, but there is a prevailing strictness; and at Zurich, those who profit from prostitution are subject to a fine and to five years at hard labor. In pre-Hitlerian Germany, the brothel was technically outlawed, but the law remained for the most part a dead letter. Germany, on the other hand, has devoted much study to the subject of prostitution and to the problem of the prostitute's reclamation for society.¹²⁷ Facts such as these will serve to explain the decided drop which the statistics of prostitution, in general, will be found to show.

The home of police regulation is still France. In Paris, prostitution has for long been cloaked in a certain romantic, bohemian glamor; but this is no more than tinsel and veneer; scrape the surface, and a degree of sordidness will be encountered that is all but incredible. (M. Roberti's novel¹²⁸ may be suggested again.) Flexner makes something of this in his report; but it is a point which should require no stressing for the one who has seen but a little of French prostitution at first hand. "*Maisons closes*" still do an open business, and vagrant prostitution, always one of the most dangerous varieties, is also widespread; the "*poule*" and the "*poule de luxe*," etc., may still be found plying their trade in street and café and on the café terrace, in Montmartre, Montparnasse

and other quarters, and in the *coulisses* of the theatre; for theatrical prostitution in France is by way of being a business in itself. France, the short of it is, may boast of her civilization and her culture, a civilization and a culture which, in her heart of hearts, she would like to make that of the world; but the fact remains, she is suffering still from a running sore on her body social—the phrase, "*plaie sociale*," is that of one of her own women abolitionist leaders; she is the one great nation left that still takes an unblushing governmental toll on prostitution.

Coming back home, we find conditions here also greatly changed since 1919, 1920, or thereabouts.¹²⁹ And the change, to all appearances, is a lasting one, and not the result of mistaken premises, as prohibition was. To assert that prostitution in America has been eradicated would be the height of absurdity; but state tolerance, save where it exists as corruption, is apparently dead, and the segregated district is definitely gone. Nor has this resulted, so far as can be seen, in any worse disorders; family residential districts have not suffered to any great extent, and the virtue of the chaste has not been seriously threatened. There has not been, either, that deep, wide rumble of popular discontent which accompanied the attempted abolishment of the liquor traffic; for the simple reason that, in this case, a defensible human right has not been infringed.

An impression of the new legislative spirit with regard to prostitution is to be had from the digest of state laws on the subject, published (1924) by Dilts and Hathaway,¹³⁰ Spingarn's *Laws Relating to Sex Morality in New York City* (1926) may also be recommended.¹³¹

¹²⁹ Cf. *What Representative Citizens Think of Prostitution*, Washington, 1921.

¹³⁰ *Digest of the injunction and abatement laws of the various states that refer to the social evil*, prepared by Arlene Dilts and C. Evelyn Hathaway, Legislative Reference Section, New York State Library, December, 1924.

¹³¹ *Laws relating to sex morality in New York City*, by Arthur B. Spingarn, revised by W. Bruce Cobb, New York, 1926.

¹²⁷ *Studien zur Erziehungsarbeit an verwahrlosten Mädchen, mit Berücksichtigung der Erführungen in Hamburg-Ohlsdorf*, von Hildegard v. Heimann, Hamburg, 1924.

¹²⁸ Note 19, above.

The reform of prostitution, however, like most of its kind, goes only so far, and in the end is no more than ameliorative. Governmental recognition of prostitution may be taken away, the "districts" closed; but the procurer's trade somehow goes on. Increasingly since the last century, the foe of prostitution has tended to concentrate a goodly portion of his fire upon the interstate (in America) and the international commerce in women and, not infrequently, in children as well. With regulation out of the way, he was free to give yet more of his attention to this phase of the problem; and with the Mann Act at home in effective operation over a period of years the American could join with reformers of other countries in attacking the evil on an international scale, through the mechanism afforded by the League of Nations. Most civilized countries now have strong legislation on the subject. In Britain, for example, there is a very effective law which permits an arrest by a police officer without warrant, where undue masculine influence is suspected. The weak point left was the international situation, where there might be a question of conflicting national jurisdictions; and here, the League's Women and Children's Committee proved a valuable weapon. As has been stated, the League reports, appearing from 1922 on, constitute an enlightening set of documents. The first international white slave congress had been held at London (1889); the dates and places of succeeding congresses may be had from a glance at the bibliography on the white slave traffic (see General Bibliography).

Seeing that modern society has, clearly, come to look upon prostitution as a social disease, it should be pertinent to inquire as to what the two conspicuously novel forms of social organization of the present day, Communism and Fascism, as represented, respectively, by the Soviet Union and by Italy, have to say on the subject.

Let us take the case of Italy, first.

Mussolini's constant cry has been, and still is, children, children, more children—citizens for the colonial empire of which Fascist Italy dreams, soldiers for an army indispensable to the realization of that dream. We accordingly find marriage encouraged, as it is in Hitlerian Germany, and prostitution and birth-control alike frowned upon, as interfering with offspring. As a result, there can be no doubt that prostitution of the older open and flagrant variety has dropped off; but that prostitution no longer exists in Italy no one, surely, would venture to state. The writer of the present paper made an informal investigation of his own on this score, in the leading cities of the peninsula, in 1932; and the impression he then gathered was that vagrant prostitution, in cities such as Rome, Milan and Florence had greatly increased, as compared with the Italy of five years, or even two years, before; it was certainly a good deal more in evidence; and one could not but feel that this was due to the ever-increasing pinch of poverty and lowering of the standard of living among the working classes of the population.

As to Russia, even those unfriendly to the new régime will admit that prostitution has been obliterated there. A recent statement to this effect comes from a Spaniard, Ramon J. Sender, in his "Letter on Love from Moscow."¹³² Señor Sender happens to be a convinced Communist; but he has been resident in the Soviet Union over a period of years, has gathered his materials at first hand, and his good faith is hardly to be questioned. He obviously is not attempting to touch up the picture. He portrays the period of sexual disorder which followed the revolution, due in large part to the demoralization of the proletariat by the utterly demoralized bourgeoisie—it was the women of the upper and middle classes who turned prostitutes, rather than go to work in shop or fac-

¹³² Ramon J. Sender, *Carta de Moscú sobre el amor (a una muchacha española)*, Madrid, 1934.

tory. Gradually, however—with surprising quickness, in fact—as Lenin foresaw, the intense work of socialist construction, especially that accompanying the two Five-Year Plans, righted matters by absorbing the energy and attention of the worker citizens—a process, one might say, of sublimating the libido, such as occurred in ancient Sparta. Soviet civilization, in brief, is an athletic one, and it is not strange if a “new Puritanism” has made its appearance there.

Prostitution in the Soviet Union, the truth is, has been not so much outlawed as rendered superfluous, through a removal of the economic cause in the form of a grinding poverty, and through a radical revision of the marriage and divorce laws. Since emotional attraction may now be gratified without economic considerations, the temptation to the marketing of emotional indifference no longer exists. The legalization of birth-control and abortion on the one hand and the exaltation of maternity on the other have had their effect. In other countries, many girls are led into prostitution through having been seduced; this obviously could not occur in the new Russia—a Russia which it is instructive to contrast with the one that knew the old Nizhni Novgorod fair.

We have observed, now, the various phases through which prostitution has passed, and we have at the same time witnessed the evolution of society's view of the evil. We have seen the Jew concerned with the purity of family life, the Greek and Roman preoccupied with the legitimacy of the citizen. We have viewed prostitution in the Christian Middle Ages as wrapped up in the problem of evil, and treated from a theological-moral standpoint. We have watched the attempt to make prostitution “safe” from the point of view of sanitation, and have noted the revulsion of feeling which this provoked. As man's social consciousness deepened, prostitution became a social malady, calling for remedial measures social in nature. As a consequence of this atti-

tude, a legal state regulation has practically been abolished in all countries save France, and the segregated district is no more.

But all along, and from very earliest times, we have noticed the presence of the economic factor—as far back as the days of religious prostitution and the dowry-seeking maids of antiquity; and we have heard Schonfeldt¹³³ and other modern authorities stressing poverty as a cause, a note that is repeated at the Abolitionist Congress of 1913. For after a police-supervised prostitution and red-light districts have been abolished, there still remains, in modern capitalistic civilization—the prostitute. Even a drive such as Mussolini's is powerless to do away with her. And New York City still has its prostitutes. So has every sizeable American city. So have London, Berlin, all the large cities of the western world.¹³⁴ Moscow and Leningrad, significantly, have none.

The present writer, however, has no desire to enforce a political point of view. Whether or not one believe that prostitution, like war, is inevitably, inextricably bound up with the capitalist system, he must surely now admit, in the light of contemporary documentation, that prostitution is an *economic disease*, to be attacked through a reformation of, if not a revolution in, our economic system.¹³⁵

I. HISTORY OF PROSTITUTION: *Les filles publiques de Paris, et la police qui les régit; précédées d'une notice historique sur la prostitution chez les divers peuples de la terre*, par A. M. (Albert Montémont), F. F. A. Béraud, Paris and Leipzig, 1839; *De la prostitution en Europe depuis l'antiquité jusqu'à la fin du XVIe siècle*, par Édouard Auguste-

¹³³ Note 18, above.

¹³⁴ Cf. Hendrick De Leeuw's *Sinful Cities of the Western World*, New York, 1934.

¹³⁵ The final word here, it would seem, has been said by the prostitutes of Mexico, who, according to reports carried by the New York newspapers of May 15, 1935, and thereabouts, had served notice on the public that they proposed forming a trade-union of their own and applying for membership in the national federation! The very definition of prostitution, as a *vending*, is significant.

Philippe Rabutaux, avec une bibliographie par Paul Lacroix, Paris, 1851; *De la prostitution dans la ville de Paris*, par A. J. P. Parent-Duchâtelet, Paris, 1857 (a classic work, scientific in spirit for its time, conclusions in need of revision); *Histoire de la prostitution chez tous les peuples du monde, depuis l'antiquité la plus reculée jusqu'à nos jours*, par Pierre Dufour (Paul Lacroix), Paris, 1851-53 (Brussels edition, 8 vols., 1851-61); *History of Prostitution, among all the peoples of the world, from the most remote antiquity to the present day*, by Paul Lacroix (Pierre Dufour); translated from the Original French by Samuel Putnam, revised edition, New York, 1932, 2 vols. (the original edition of this translation was a 3-volume one, published at Chicago, 1926; it is not to be recommended, as it contains numerous typographical and other errors); *Zur Geschichte, Statistik und Regelung der Prostitution*, von F. S. Hügel, Vienna, 1865; *History of Prostitution; its extent, causes and effects throughout the world, being an official report to the Board of Almshouse Governors of the City of New York*, by William W. Sanger, New York, 1869 (revised edition, New York, 1898; the most extensive work in English, but of little value for recent decades); Flexner's *Prostitution in Europe*, *op. cit.*, note 33; McMurtrie's *A Study of Prostitution in Europe*, *op. cit.*, note 37; Iwan Bloch's *Die Prostitution*, *op. cit.*, note 50 (the most scholarly history of all); Fischer's *Die Prostitution*, *op. cit.*, note 44; Cortes' *La Prostitución en nuestros días*, *op. cit.*, note 45; *What Representative Citizens Think of Prostitution*, *op. cit.*, note 129; the League of Nations reports, from 1922 on (see below); Boiron's *La prostitution dans l'histoire*, etc., *op. cit.*, note 47; Armand, *op. cit.*, note 48; article by Putnam, *The Psychopathology of Prostitution*, cited in note 49. In connection with ancient prostitution, Bloch's paper referred to in note 89, is not to be overlooked. On prostitution in the republic of Venice, in addition to the works cited in note 19, see: *Leggi e memorie venete sulla prostituzione fino alla caduta della repubblica*, Venice, 1870-72.

II. PROSTITUTION AND VENEREAL DISEASE:

Alfred Blaschko, *Hygiene der Prostitution und der venerischen Krankheiten* (Handbuch der Hygiene, Jena, 1893-1901); Blaschko, *Welche Aufgaben erwachsen dem Kampf gegen die Geschlechtskrankheiten aus dem Kriege*, Leipzig, 1915; *Conférence internationale pour la prophylaxie de la syphilis et des maladies vénériennes*, Brussels, 1899 (*compte rendu des séances*); Ernst Carl Edouard Camille von Düring, *Prostitution und Geschlechtskrankheiten*, Berlin, 1916 (cf. note 27); F. Deuticke, *Die Prostitution vom Standpunkte der Sozialhygiene aus betrachtet*, Vienna, 1900; Léon Le Fort, *De la prostitution dans ses rapports avec la propagation des maladies vénériennes*,

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VIII. WORLD WAR AND PROSTITUTION: for prostitution at Paris during the War, *Les maisons de prostitution de Paris pendant la guerre*, par Léon Bizard, Poitiers, 1922; *Indications sur la prostitution vulgaire à Paris depuis le début de la guerre*, par Le Pileur, Paris, 1918. For a German view of the War and venereal disease, see: *Welche Aufgaben erwachsen dem Kampf gegen die Geschlechtskrankheiten aus dem Kriege*, von Alfred Blaschko, Leipzig, 1915. One thing that the War did, in connection with large military encampments and ports of embarkation, was to afford the social pathologist an unrivaled opportunity for a study of the mentality and reactions of the prostitute. See: *Mental deficiency of Prostitutes; a study of delinquent women at an army post of embarkation*, by Paul A. Mertz, Washington, 1919. An important survey of the whole subject is Magnus Hirschfeld's *Sittengeschichte des Weltkrieges* (magnificently illustrated), Leipzig und Wien, 1930.

S. P.

PROSTITUTION IN THE UNITED STATES. Prostitution in this country has been characterized by our changing social frontiers. The colonists of New England and the Middle Atlantic States brought their families and established homes. Sexual irregularities were there sporadic, and were not marked by promiscuity nor venality. Puritan repression, patriarchal authority and social conventions were occasionally flouted; but commercialized prostitution was exceptional.

In the old South, the presence of many indentured white servants and Negro slaves tended to weaken domestic institutions. Masters were able to dispose of the persons of their retainers, and often regarded Negroes as cattle. Human stock breeding and concubinage were common. Colored people were without permanent marital rights, and often drifted into loose sexual relations. There are two million mulattoes in the United States, whose mixed parentage indicates the extent of lax racial contacts.

Rapid migration to western territory broke many families. Sometimes years elapsed without word from relatives. Meanwhile, temporary or new alliances were formed. Men and women shifted in and out of camps and settlements, seeking what companionship they could find. Romantic attachments, abandonment and desertion left many persons to solace themselves with whatever protection the situation afforded. Women were at a premium as mates on the frontier; and in the settlements, some of those without a man to help support them, found lonely visitors a source of income. Sporting houses and cribs appeared in trading centers and mining camps.

When hordes of immigrants began to pour into eastern ports, many unattached young people were stranded in a strange environment. As foreign servants, laborers and clerks they were not welcomed in native homes. So they sought amusement and comfort in assemblies and rendezvous. Many of them came from countries where gallantry and prostitution were familiar social forms of diversion. Some of these alien men and women grasped at this opportunity to make a living and gain recognition. To the natives, imported vice seemed more piquant and less reprehensible than the homespun article. So we received a fresh lot of prostitutes and pimps with each wave of immigration.

As cities began to grow about centers of trade and industry, swarms of boys and girls from the back country moved

in to find jobs and wider opportunities. Many of them were unsophisticated and eager for new experience. The town offered a wide field for adventure and exploitation. Commercialized recreation and vice attracted some. It seemed an easy way to get enjoyment, to make money, or even to win prestige. Thus many of our people turned from straightened paths of conventional morality, and sought release in the gay life of the city. Prostitutes and their patrons made open towns their headquarters. Sometimes business men and officials encouraged a certain amount of license, as an attraction for lavish spending.

The opening of new occupations for women, greatly enlarged their freedom. Released from restricted activities in the home, they rapidly sought employment in factories and offices. Economic independence brought greater civil liberty. Women claimed and won recognition in political life. Constant association with men outside of domestic circles led them to demand complete responsibility. Some women claimed the right to dispose of their persons as they saw fit. The double standard of morality was challenged. Widening knowledge concerning contraception made it possible to avoid maternity within or without wedlock. More latitude in sex relations resulted. In consequence, the sharp distinction between "good" and "bad" women has been blurred. We now begin to recognize them as human companions of various degrees of goodness or badness, in sexual matters, as well as in many other respects.

Crossing these old boundaries of community life, affected standards of public morality. Tolerance or indifference to the ways of outsiders was accepted as evidence of broad mindedness. At the same time, cherished traditions of domestic life had to be maintained. Accordingly, conventional distinctions between proprieties at home and behavior elsewhere were established. Escapades were condoned, if they

avoided unfavorable publicity. Conceding a natural and insistent desire on the part of errant males for relations with women, a channel of indulgence was allowed through obscure brothels or segregated districts. This was the characteristic American solution of the problem, which persisted until 1909.

Although expressly forbidden by law in all but three states, open houses and vice areas are known to have been tolerated by local authorities in seventy-eight places throughout the country. The accepted theory was, that by confining prostitution to certain quarters, the rest of the community would be protected against invasion. Police officials generally favored segregation, because it enabled them readily to keep track of dissolute persons, and so to control their activities. Registration, a license and special regulation of conduct were sometimes imposed upon inmates. Physicians also approved reglementation, because it permitted periodic examination and quarantine of diseased women, as a safeguard to the health of patrons. Most citizens acquiesced to these practices, because they knew little about such matters, and assumed that the authorities were following the best system.

A series of investigations begun in 1910, soon proved that in few places did segregation confine prostitutes to one quarter. Women shifted rapidly within the community, and often moved to other places, where they were unknown to the police. New recruits appeared, who did not register in open houses, but picked up customers on the street, in cafes and dance halls. It was impossible to sequester all these birds of passage in a city, and improbable that all questing males would restrict their advances to certified strumpets.

Because vice districts were lures for criminals, they were also found to be troublesome corrals to manage. Open solicitation, indecent exhibitions, drunkenness and fighting were common incidents. Hangers-on occasionally added distribution of obscene publications,

drugs and doubtful betting tips to the attractions. A special detail of police was ordinarily required to maintain order. When the districts were closed, total arrests for disorderly conduct in the cities containing them fell off noticeably.

The belief that a superficial fortnightly examination of registered women would protect their patrons against venereal infection, was also found to be illusory. From a third to a half of the common prostitutes examined were found to be diseased. Although the girls themselves might be immune, they frequently transmitted the virus of syphilis and gonorrhea among their many customers. Army and navy surgeons prescribed prophylactic treatment for all men who had been exposed. The rate of venereal disease was shown to increase in the vicinity of resorts for prostitution.

It was also found that vast sums of money were squandered in such places. Not only amounts paid to the women, but excessive charges for liquor, entertainment and special services swelled the receipts of the houses. Privacy and protection were costly, because blackmail and robbery were easy in such places. If, in addition to such charges, we include those upon the community for policing, medical treatment and deterioration of surrounding property, it seems evident that the immediate gain of a few persons was offset by more permanent losses for many others.

Finally, it appeared that vice districts were sources of corruption to the community. Police officers were subject to bribery for waiving regulations. Higher authorities were discovered to share in contributions that helped to elect them and to influence their policy of law enforcement. Liquor dealers and landlords relaxed their observance of ordinances, because bawdy house keepers paid well for accommodation. Thus the system was shown to be a source of demoralization for local government.

The most disquieting disclosure concerning open houses and districts was

that they offered a ready market for girls who were seduced and forced to work in these resorts. A report by the Immigration Commission on the Importation and Harboring of Women for Immoral Purposes roused Congress to action. The Mann Act (1910), penalizing transportation of women across state lines for such purposes, checked the white slave traffic. From 1911 to 1913, the Department of Justice kept lists of the inmates of resorts in 310 cities to prevent exploitation. The Immigration Law of 1917 debarred all persons seeking entrance to the United States for immoral ends.

In 1910, a grand jury in New York, after examining the evidence, concluded that while no proof of a master syndicate to entrap and exploit women was forthcoming, procurers and proprietors of houses in several centers worked together in placing girls in the resorts. It recommended severe penalties for pandering, added protection against misuse of places of meeting, and urged the appointment of a commission to study methods of minimizing prostitution. During the next seven years, more than forty states and cities investigated conditions, strengthened their laws, and closed their vice districts. This wave of reform was backed by Federal authorities, who insisted that towns near concentration camps should be cleared of demoralizing resorts. Subsequently, some of the places reopened quietly; but their old brazen assurance was gone.

The investigations showed that although few women in open resorts were actually victims of violence, some girls had been duped into entering the life, and were subject to restraint and exploitation. Many were ignorant, helpless and hopeless about getting out of the business. They were often in debt to the house for clothes and services. Occasionally they were intimidated and maltreated by pimps. Some were alcoholics and drug addicts. Such traits made them readily submit to threats and imposture.

The number of prostitutes in the United States to-day is unknown, because there is no adequate registration of such persons. The women of the old "line," have scattered from cribs and parlor houses, to find residence in cheap hotels and flats. Street walkers have become more wary, and now do business in apartments and road houses. Call lists at places of assignation, and appearance on the floor of gay night clubs, replace pre-war types of open solicitation. Traveling shows, expositions and celebrations afford opportunities for moving about. The modern prostitute is free to wander in and out of resorts, so long as she avoids running afoul of local authorities.

Many studies of the women have been made; but these are apt to restrict attention to one type or locality. During the World War, the Interdepartmental Social Hygiene Board collected data concerning more than 100,000 women picked up about army camps. This sample includes various grades of prostitutes, and covers different sections of the country. Among the 15,000 cases tabulated, the following general characteristics seem significant.

Compared with the ratios of like elements in the general population, according to the census of 1920, the percentage of colored, foreign born and native girls of foreign parents is excessive. Most of the foreign women had lived in this country less than ten years. Mexicans and Russians top the list of outsiders. These facts indicate lack of assimilation in native society.

The age of nearly half the girls was from 16 to 20 years. A majority had left school to go to work before 16. Eighty-three percent had only a grammar school education. Nearly a third had never worked regularly; and less than half were employed when found. The greater number gave unskilled occupations, in which their wages ranged from \$5 to \$15 a week. Such data suggest lack of training, experience and economic resources. Over half the number came from broken homes. A third

had lived in the locality less than one year. More than a quarter were boarding. Here are signs of loose anchorage and rapid drifting in the life of the community.

A majority of the girls admitted that their first sex adventure had occurred when they were from 14 to 18 years of age. One fourth had borne illegitimate children. Most of them said the reason for early compliance with the wishes of a lover had been the promise of marriage. More than a third declared their reason for following prostitution was to make money. This statement outlines a sordid history (perhaps somewhat rationalized) of seduction, abandonment and a cynical decision to get something out of the mishap.

Fourteen percent of the cases were judged to be mentally subnormal. Forty-three percent were infected with syphilis; fifty-six percent with gonorrhea. Evidently most of the women were intelligent enough to understand what they were doing, but risked the consequences.

Apparently few women gain much by prostitution, despite the large amounts of money they occasionally handle. Expenses are heavy, because other persons demand a share of the income. In old-fashioned houses, the madam, or manager, used to claim half the fees. A woman working on the outside frequently has a lover or bully, who demands the lion's share for his protection. Various commissions and bribes have to be paid. Landlords and servants must be compensated for harboring an undesirable person. Women who sell liquor to guests dare not bargain too closely with dealers' agents. Here is a real economic motive for promoting prostitution as a business. The girls are often attractive bait for reckless spending which benefits other persons. The smart adventuress generally lives luxuriously, and ends broken in health and means.

Many attempts to reclaim girls from a dissolute life have been made by various agencies. When the old districts

were closed in San Francisco, Norfolk and Baltimore, inquiry was made of the women regarding their plans for the future and offers of assistance were given by local reform associations. With few exceptions, confirmed prostitutes preferred to move on to other places or to return home rather than to accept employment. The excitement, irresponsibility and easy money of sporting life fascinate the women. They become accustomed to its ways; and are loath to change for the discrimination, rigor and paltry earnings of a routine job. In short, prostitution becomes a career, if not a profession, to many. On the other hand, a stream of young women flows into and out of the business, as men enlist for a time in the army or navy.

In the days of parlor houses, older and more experienced women managed the places. Some of these madams owned the establishments; others served as matrons to supervise the business for absent proprietors. With the passing of the tenderloin, these women became less important. A few survive as landladies, companions and adopted relatives, who coach and make commissions on the activities of their protégées.

Adequate studies of the men who exploit prostitutes are few. Such as we have, reveal persons of low cunning, who find compensation for their lack of hardihood by tyrannizing over women. The patrons, or customers, who furnish the real demand for the business, come from every social level. They appear for the most part to be young unmarried men seeking temporary sexual satisfaction, and those of excessive or perverse appetites who do not find release in normal relations.

Concerning male prostitutes and inverters, who are found in many groups where men are deprived of association with women, we can here add nothing. It must be remembered, however, that sexual habits are in many respects, learned reactions. Unformed tastes in this province of life may be developed in various ways, according to the social

pressure brought to bear upon individuals. While the ordinary restrictions of marriage and family life may repress many natural impulses, prostitution, by its forced appeal to erotic passion, may establish factitious sexual demands. Its blatant or covert advertisement may, in part, account for increasing curiosity and restlessness under restraint.

Many persons profit indirectly from the business of prostitution. Bartenders, waiters, chauffeurs, house servants and amusement resort attendants are frequently able to "spot live numbers," and may supply addresses for a consideration. Saloons, cabarets and road houses furnish rendezvous for the sporting fraternity. Tips and commissions for discrete service contribute to their revenue. Liquor is often an essential for wild parties. The use of property for immoral purposes frequently pays high returns on the risk. Thus a wide fringe of interested persons may spread throughout a community, and help to establish a general impression that "easy money" might better be spent in the place than squandered elsewhere. This lenient attitude toward lurking vice facilitates its encroachment.

With the closing of vice districts, the places for carrying on solicitation and prostitution changed. We have indicated how cribs and large parlor houses fell into disuse. The old saloons, with their back rooms and accommodations upstairs, were put out of business by national prohibition. Presently, cafés and night clubs replaced them as public resorts. Unsupervised dance halls gave opportunities for picking up partners for other purposes. The automobile added facilities for privacy and swift transit. During the 1920's, popular songs commented upon girls who were compelled to walk home from rides with disappointed drivers.

At present, lax hotels, call houses and private apartments supply the principal accommodations for prostitutes. It is difficult to control such places, because

improper visitors are readily introduced under various pretexts. A card or personal introduction may be required for admission to exclusive resorts. An invitation to drop in for a cocktail or a bite after the show cannot be considered an immoral proposition. If callers are orderly and not too continuous, neighbors and fellow tenants seldom object to such hospitality. Week-end parties or vacation trips to outlying places may easily cover clandestine affairs.

Methods of treating prostitution cannot be soundly established upon the basis of unproved theories concerning human nature and the social order. As our historical sketch shows, different policies have been pursued according to prevailing beliefs as to whether sexual indulgence should be allowed outside of marriage. This problem is difficult to solve, until we determine the conditions upon which marriage itself may be consummated. If we decide further, that marriage exists solely for the procreation of children, the question seems to be settled against prostitution. However, if we hold that marriage exists also for the satisfaction of persons of opposite sexes, then those who cannot fulfill the conditions for matrimony may demand indulgence outside of such relationship. Mere precept or precedent will not check this tendency.

As a matter of fact, public policy has oscillated between toleration, regulation and repression of prostitution. It is unnecessary to repeat the arguments for and against these plans. Perhaps the outstanding fact is, that we have tried a little of each in turn or all together. We may some day regard prostitution as a symptom of more fundamental social pathology. Could we remove the conditions that produce such disorder, and correct the attitude which maintains that these circumstances are necessary, we might hope to drain the morass of broken relations called prostitution.

Under a policy of toleration, the police content themselves with warning disorderly persons, arresting others for overt breaches of the peace, and col-

lecting payment from those of doubtful standing. Occasional raids upon notorious resorts are staged; and the town is cleaned up when conditions become offensive to influential or vociferous citizens. Since public order depends upon political judgment in such situations, consistency in law enforcement is scarcely to be expected.

Under a policy of regulation, compliance with rules for registration, sanitation and deportment in authorized resorts were usually enforced. A special squad or detail was generally assigned to this job. However, we have seen how close attention to one district and its personnel, prevented these same officers from checking developments in other quarters.

Under a policy of repression, police measures consist mainly of arresting prostitutes, and occasionally their male companions, for vagrancy or disorderly conduct. Managers of houses and procurers are treated more severely for maintaining disorderly resorts and profiting from the delinquency of another. Transportation of women across state and national lines for immoral purposes is dealt with severely by Federal authorities and through international agreement (Conference of 1904, adhered to by U. S. in 1908.) Owners of property have been held liable for misuse of their premises and these have been closed by court order.

In most parts of the United States, brothels were closed by refusing them permission from the police to operate. In Iowa, disorderly resorts were put out of business by enjoining the properties as public nuisances. In Portland, Oregon, private houses were kept from improper use by ticketing them with the owner's name. Prostitution in a tenement was made a serious offense for owner and operator in New York City. Hotels were required to register only such transient guests as show baggage, and to furnish meals upon request. Saloons were temporarily closed by national prohibition; and street solicitation was checked by special details of

detectives and policewomen. In some places, private agencies assisted by supplying information, prosecuting cases and arousing public sentiment.

Progressive judges no longer impose small fines upon women of the streets or give them short terms in a workhouse. The former turns out to be an indirect tax: the latter leads to further demoralization. In some jurisdictions, special courts for women have been established for more adequate investigation of their character and social background. Parole under adequate supervision, removal from demoralizing conditions of home life and indeterminate detention under reformatory discipline are recommended. Consistent administration of such measures appears to dry up overt prostitution.

The attack upon venereal disease has advanced from periodic examination and detention of public women, to provision of free clinics for all persons infected. Quack doctors and charlatans who battered upon the ignorance of distressed patients were driven to cover (e.g., Oregon laws). Routine blood tests and medical advice before marriage have been promoted in some places. Registration and treatment or quarantine of all active venereal cases is required in more progressive communities, with limited success. In 1929, about seven infected persons per thousand population were reported in a sample area of the United States. Higher rates among young men, particularly in cities, show positive correlation between the amount of venereal disease and the extent of prostitution in the community. Army data also confirm this relation.

During the World War an effort was made to go beyond warning and prophylaxis for American troops, to constructive education about sex. Recreation centers were established wherever conditions permitted. Lectures and moving pictures presented the reasons for clean living. In many schools and colleges, a similar effort has been made to establish among young people a whole-

some attitude toward sex. Leading schoolmen advocate early acquaintance with the facts of generation, so that children may come to adolescence without a shock concerning new vital functions. How far such information results in checking crude youthful experimentation, we cannot tell. The general opinion is that discussion of sex matters is now franker and more wholesome than formerly. Perhaps such widening of general understanding removes a certain dark mystery about sexual relations.

The social consequences of repression are difficult to estimate. In the United States, the effects of the World War unsettled moral standards, but strengthened governmental control. For ten years thereafter, investigators reported general improvement in public conditions, due to better administration. At the same time, it was believed that occasional and clandestine prostitution had increased among the younger generation. The vogue of bootleg liquor, dance halls, night clubs and automobile resorts facilitated such practice. The depression dimmed these allurements, but also curtailed the work of public and private reform agencies.

The next five years weakened local administration, and produced a new growth of tolerated resorts and common prostitutes. Since women now drink, tramp and seek amusement with men in public, contacts are easier. However, white lights and financial stringency have eclipsed the old disorderly houses. Many girls and boys without work recently have drifted into casual prostitution. The movies have displayed to children fantastic exhibitions of sex and crime. But the spread of syphilis seems to have been slowed down by more adequate treatment; and wider dissemination of knowledge concerning sex hygiene now enables young people to safeguard their health.

Comparison of methods used in other countries to deal with prostitution convinces an observer that the recent American practice of suppression is in

line with progressive policy elsewhere. England, Germany and the Scandinavian states have outgrown toleration and regulation of vice. They place less emphasis upon punishing the prostitute, and more upon checking her exploiters. Sanitary and educational aspects of the subject are also stressed. A well established administration has enabled some countries to effect more consistent improvement than can be accomplished under our divided and shifting political scheme. This is particularly true of fundamental provisions for social security and welfare, such as decent housing and regulation of employment, insurance for workers and mothers, wholesome recreation and vocational training.

It seems evident that policemen, doctors and schoolmasters cannot eradicate prostitution among us, because it is essentially a social evil. Its roots go deep into our distorted domestic, economic and political life. The normal impulse to early mating is often thwarted by lack of means to make a home or by sheer convention. Celibacy, monogamy or prostitution, are presented as the fates of mankind. Marriage and divorce are consigned to clergymen and magistrates to effect, according to their respective codes and precedents. Children are considered an embarrassment to the ambitious and a calamity to the poor. Social status is generally fixed by wealth; and wealth is acquired by exploitation more than by service. Planes of living in a community vary from idle luxury to strenuous poverty. Cities are built to develop business and industry rather than to accommodate many well conditioned households. Recreation is commercialized, and education becomes routine learning. Government protects property interests before life itself. Punishment is meted out to those who lack clever counsel, and the virtuous are promised rewards hereafter.

In such tortuous channels of thought and action, it is not surprising that many persons become confused, warped and cynical. Selling out is common.

Shrewd individuals make profitable bargains: stupid ones have to take whatever they can get. Prostitutes who have only their bodies to barter, are like ricksha runners about a railway depot or sweat-shop workers around a factory. Their presence is an anomaly that indicates more profound social disorganization. The proper treatment of these underlying conditions requires more difficult operations than merely draining the open sores of prostitution.

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H. B. W.

PSYCHOANALYSIS. Psychoanalysis owes its origin and development to a deep interest in mankind. Dr. Joseph Breuer of Vienna (1842-1925), to whom Professor Freud gives the credit for initiating him into what he later called *psychoanalysis*, was led to his discovery

by a young woman, Anna O., one of his hysterical patients. "Necessity is the mother of invention," they say, and this young woman, whom Breuer could not cure through the ordinary medical procedures despite the coöperation of famous specialists, finally led him accidentally to believe that her hysterical symptoms could be made to disappear if she could relate in a state of hypnosis her trials and tribulations at the time of their onset. It is to be noted that at that time hysteria was considered by most investigators as an organic disturbance of the brain, and by some as a willful simulation or deception, so that such a procedure must have seemed quite novel. Moreover, Dr. Breuer, who was a scientist of note, knew his medicine too well to explain all the variegated symptoms of hysteria through some local cerebral hyperemia, and as a keen student of human nature, he had too much insight into his patient's make-up to consider her a malingerer.

When the patient vaguely indicated that her malady was associated with some of her disagreeable and painful experiences, Dr. Breuer willingly gave her all the time required for her story. As a matter of fact, he listened to her daily for at least an hour, and the treatment continued for one and a half years.

Let us for a moment consider the psychological situation from the side of the patient and that of her physician. The very willingness or perhaps desire to be hypnotized and then unburden herself to her physician must have been based on a special feeling towards him, for one does not, so to say, surrender one's personality to a person whose sympathy one does not sense. That Dr. Breuer should have been willing to discard the knowledge and routine of the medical practice of his time for the sake of helping this young woman, plainly show that he must have entertained a fondness for her. In other words, we may conclude that there was a feeling of mutual regard and sympathy, or per-

haps better expressed, a good *rapport* between the doctor and his patient, a feeling which at that time was not considered in any way related to sex. To Breuer it represented a feeling of sympathy, a fondness which one frequently encounters between people of the opposite or the same sex. Professor Freud later subjected this *rapport* to deeper investigation, and readily demonstrated that it is a very delicate and complex emotional feeling. The phenomenon of *transference*, as Freud later designated it, is one of the great pillars of the analytic technique.

However, Breuer soon became convinced that his patient was justified in associating her symptoms with the disagreeable experiences of nursing her dearly beloved father, and he listened to her regularly while she recalled everything in a somnambulic state. At first, he considered her productions as pure fantasies, but he soon became convinced that they were based on real situations, albeit more or less embellished and distorted. The fact that the patient related her experiences in a somnambulic state accelerated this treatment. For hypnotism broadens consciousness by excluding from the mind all impressions from the outside world except the situation in question, and thus permits the patient to recall the past in an emotionally uninhibited state and re-live the pathogenic scenes which laid the foundation for the symptoms. Breuer soon found that whenever this occurred the particular symptoms disappeared.

The *cathartic method*, for so it was called, was developed by Breuer about ten years before it was published, and he discussed it with Freud during 1880-1882, while this patient was under his care. When Freud later worked with Charcot (in 1885), he told him about this discovery, but as Charcot displayed no interest, Freud dropped the matter until he returned from Paris in 1886. The case of Anna O. then recurred to his mind, and he asked Breuer to tell him more of its details, for he

decided to utilize Breuer's discoveries and test them in his own cases.

To understand the development of psychoanalysis, it will be necessary to mention a few details of Breuer's case. It concerned a young girl of more than ordinary education and endowment, who, as mentioned above, developed a variegated morbid picture while she was nursing her dearly beloved father. When Breuer first saw her, she suffered from paralyses with contractions, inhibitions, and peculiar states of confusion. It was by accident that Breuer discovered that she could be freed from her confusion if she could be made to give expression in words to the affective fantasy which dominated her. But as soon as this dawned upon him, he saw her regularly, and let her tell her stories while in a hypnotic state, which thus freed her of all depressive confusions as well as of her somatic disturbances. In the waking state she knew nothing about the origin of her symptoms, but in the somnambulic state she immediately discovered the connection between her disturbances and her experiences.¹

Having corroborated Breuer's findings, Freud then urged his older colleague to publish his cases together with his own results. In 1893 they published a preliminary report "On the Psychic Mechanisms of Hysterical Phenomena," in which they informally designated this form of treatment as the *cathartic method*, and in 1895 they gave out their conjoint work, *Studies in Hysteria*.

The startling results published in this book can be briefly summarized as follows: Hysteria is a disease of the past. The symptoms are psychogenetically determined; they came into being because the patient was prevented from consciously elaborating and assimilating some psychic energy which was connected with something that was impossible of attainment. This psychic

¹ For a full description of this case, see *Studies in Hysteria* by Breuer and Freud, translated by Brill, Journal of Nervous and Mental Diseases, Monograph Series.

energy having been pushed away from consciousness, (repressed) was then deflected to some somatic innervations (conversion). The symptom is thus a substitute, or as Freud later designated it, a monument of an unelaborated or omitted psychic act. The cure was effected by reconducting the displaced affect into its normal channel through *abreaction*; that is, through affording the patient the opportunity to re-live the situation in question by giving vent to those affects which had to be strangled at the time of their occurrence.

Following Breuer's withdrawal from this collaboration, Freud soon made many modifications in the technique. The cathartic method gave excellent results, but as not every patient could be hypnotized, its application was necessarily limited. Moreover, the results that were thus obtained were only of a temporary nature as they largely depended on an intimate relationship between the doctor and the patient. As a matter of fact, both investigators discovered this independently. After he cured Anna O., his first patient by the cathartic method, Breuer was dismayed to find that she was in love with him. This undoubtedly accounted for his unwillingness to report this very interesting case. "It evidently was painful for him to be reminded of this seeming mishap."² Later, Freud made the same discovery; one of his patients on emerging from a hypnotic state threw her arms around his neck. Having already been convinced of the inadequacy of hypnosis, he now also realized the danger and awkwardness of the cathartic method, and although this last experience gave him much insight into the mystery of the phenomenon of hypnotism, he decided to give up the cathartic method.

When one reads Freud's history of psychoanalysis,³ one finds that soon after Breuer left the field, Freud gave up

hypnotism, which was the backbone of Breuer's cathartic method, and replaced it by the method of *free association*. For in his effort to cause the patient to recall the past without the use of hypnotism, he thought of an experiment which he had often witnessed in Bernheim's clinic, where the test-person was made to recall suggestions which were given him in a hypnotic state. As is known, the test-person invariably shows a complete amnesia for everything imparted to him during the somnambulant state. Bernheim felt, however, that the post-hypnotic amnesia could be broken through, and by assuring the test person that he did not remember what had occurred during the hypnosis, and by putting his hand on the patient's forehead and urging him to tell whatever came to his mind, the amnesia finally disappeared, and the test person actually recalled what happened during the hypnotic state.

Freud reasoned that his hysterical patients, too, must know unconsciously what they are able to reproduce in a somnambulant state, and by using Bernheim's technique and urging them to tell freely whatever flashed through their minds, his patients sooner or later reproduced the pathogenic bases of their symptoms. The usual procedure was to let the patient lie in a prone position on a couch. The physician, sitting at the head of the couch, put his hand on the patient's forehead and requested him to concentrate his mind on the symptom and tell everything that flashed through his mind regardless of its relevancy or relationship to the thought in question.⁴ Everything that occurred to the patient he was asked to communicate to the physician; he was to omit nothing and refrain from all criticism. However, as the free associations thus obtained necessitated considerable interpretation on his part,

⁴ This technique has not been changed except in one point; namely, there is no physical contact whatever between the patient and the physician. Freud gave up holding the patient's forehead very soon after he began to use the free association method.

² Freud, *Selbstdarstellung in der Medizin*.

³ Freud, *History of the Psychoanalytic Movement*, translated by Brill, Monograph Series, *Journal of Nervous and Mental Diseases*.

for everybody has his own mode of expression, Freud designated his new procedure as *psychoanalysis*, which means mental analysis. Psychoanalysis thus became the administrator of the estate left by hypnotism.

To obviate a common misunderstanding, let us repeat that whereas psychoanalysis means mental analysis, not every mental analysis is psychoanalysis; psychoanalysis in the Freudian sense signifies a definite kind of mental analysis. Its special technique utilizes interpretation of dreams and faulty actions.⁵ Psychoanalysis justly claims that it is the science of the deep and unconscious psychic strata. Its theoretical implications are based on a mass of clinical material and have been developed by Freud over a period of forty years.

Freud maintains that the analytic theory of the neuroses rests on the following pillars. The recognition of *unconscious* psychic processes, the recognition of the theory of *resistance* and *repression*, the importance of the *sexual instinct* and *oedipus complex*, and the mechanism of *transference*.

Without elaborating on all of them, let us speak of transference. There has been much misunderstanding concerning this mechanism. Despite the many assertions to the contrary by Freud and his pupils, some physicians and laymen mistakenly believe that transference means falling in love, and that during a psychoanalytic treatment the patient invariably falls in love with the physician. As a matter of fact, Freud tells us that the process of transference represents a striking peculiarity of neurotics observed during the analytic treatment, which manifests itself in *affectionate as well as hostile feelings* towards the physician, which are not, however, based on real situations, but originate in the early affective relations between parents and children. The mechanism of transference is based on the experi-

ences and conflicts between the child and his parents.

Freud came to the conclusion that these early experiences remained indelibly impressed in the mind, and later determined the whole disposition of the individual. The mode of transference demonstrates to what extent the individual has overcome his infantile helplessness and dependence, and to what extent he or she still adheres to the parents. No person can altogether free himself from his early attachments, but the neurotic is naturally more burdened by it. The neurotic invariably brings along into adult life a large fragment of his infantility. The process of transference is thus a universal phenomenon, the influence of which perforce depends on the early environment. There are, so to speak, good and poor "mixers," or rather easily or poorly adjustable persons. Such individual differences are readily discerned in the *ego* or *conscious personality* of the adult, and largely determine his ethical and aesthetic outlook.

The psychogenesis of symptoms first indicated by Breuer's cathartic method, and later fully developed by the method of "free association," led Freud to the discovery of the so-called *infantile sexuality*. This discovery was altogether based on empiric material, for in probing for the origin of hysterical symptoms and tracing them as far back into childhood as was possible, Freud found that definite physical and psychical activities of a sexual nature manifest themselves clearly in the earliest ages of the child, and that the traumas underlying the symptoms are, therefore, invariably of a sexual nature. And as these findings existed in all his cases, he finally became convinced that sexual activities of childhood cannot be considered as abnormal, but as normal phenomena of the sexual instinct.

Following these discoveries, it was quite natural that he should also investigate the rôle of sexuality in the extensive syndrome of neurasthenia. To his surprise, Freud found that all his

⁵ Freud, *The Psychopathology of Everyday Life*, and *The Interpretation of Dreams*, translated by Brill.

so-called neurasthenics presented some sexual abuses, such as *coitus interruptus*, *frustrated excitement*, *sexual abstinence*, *excessive masturbation*, etc. In the process of investigation he also brought order into neurasthenia—this “garbage can” of medicine, as Forel aptly called it, by separating from it those cases which were mainly characterized by anxiety.⁶ These results were embodied in his classical paper, “On the Right to Separate from Neurasthenia a Definite Symptom-Complex as ‘Anxiety Neurosis,’ ”⁷ wherein he first calls attention to the relation between anxiety and sex, a study which he has continued ever since.⁸ All these findings finally led him to the conviction that all neuroses represent a general disturbance of the sexual functions, that the *actual neuroses* (neurasthenia and anxiety neuroses) result from a direct chemical or toxic disturbance, while the *psychoneuroses* (hysteria and compulsive neuroses) represent the psychic expression of these disturbances. This view, which was at first based on the findings of the sexual life of adults, and has since 1908 been reinforced and confirmed through the analyses of children, was finally expressed in the famous dictum, “*In a normal sexual life no neurosis is possible.*”

It is interesting to note that Freud himself thinks that the ubiquity of sex in the neuroses was in all probability inspired by a few casual remarks heard at different times from three of his teachers—namely, Breuer, Charcot, and Chrobak.⁹ “But, I did not understand at that time,” he states, “what these authorities meant; they have told me more than they themselves knew or were even prepared to acknowledge. What I

gathered from them slumbered ineffectually within me until it casually emerged, seemingly as an original cognition, during my investigation of the cathartic method.¹⁰ Nor was Freud aware of the fact that hysteria had been associated with sex since the earliest period of medicine by no lesser luminaries than Plato and Hippocrates.

By stressing the rôle of sex in the neuroses, Freud anticipated that he would become alienated from the medical, as well as from the lay world; but there was no other course for him to follow—he had to tell the facts as he saw them, and take the consequences. As he expresses it: “*Mein ärztliches Gewissen fühlte sich durch diese Aufstellung befriedigt.*” (My medical conscience was eased by this formulation.)¹¹

As there has been so much controversy concerning Freud's theories of sex, I wish to emphasize the fact that Freud did not set out on a sexual expedition in order to discover new sexual realms. Prior to his collaboration with Breuer, which directly led to his discoveries, neither his private nor his scientific life in any way indicated any particular interest in sex. As a private individual, he led an exemplary married existence, and there has never been a breath of scandal connected with his name.

When we examine his scientific activities, we find that psychiatry was the only branch of medicine which attracted him, that while still in the university he worked on the anatomy of the central nervous system. In 1884 he wrote a paper on cocoa, and it was Freud who first called Dr. Koller's attention to the possibilities of cocoa as a local anaesthetic. In 1891, he wrote on cerebral paralysis in children, and on the concept of aphasia. In 1893, when in collaboration with Breuer, they published their preliminary contribution on the psychic mechanisms of hysteria, Freud

⁶ Brill, *Diagnostic Errors in Neurasthenia*, Medical Review of Reviews, March, 1930.

⁷ *Selected Papers on Hysteria and Other Psychoneuroses*, translated by Brill, Monograph Series.

⁸ Freud, *Hemmung, Symptom, und Angst* (Gesammelte Schriften, Int. Psychoanalytic Verlag).

⁹ *History of the Psychoanalytic Movement*, p. 6, translated by Brill, Monograph Series, Journal of Nervous and Mental Diseases.

¹⁰ Freud, *Selbstdarstellung in der Medizin*, p. 13.

¹¹ l. c. p. 14.

also gave out a classical work on cerebral diplegias of childhood. And in 1897, a few years after he had written about the rôle of sex in the neuroses, he wrote the chapter on infantile cerebral paralyses for Nothnagel's *Textbook of Medicine*, the standard work on internal medicine at that time. All this readily shows that his great interest in sex grew and developed only as a by-product of his investigation of the origin of the neuroses.

Nor was sex the only problem which this investigation aroused in him. In 1900 he gave out his epoch-making work, *The Interpretation of Dreams*.¹² This very intricate problem was also forced upon him by the study of his patients. For in penetrating deeply into his patients' productions, he found that the dream, which science hitherto discarded as a product of indigestion, was really a very important mental function. Freud divides the dream into the *manifest* content, which the dreamer recalls, and the *latent* content, which is attained only after a complex analysis. The manifest content is usually brief and seems absurd and illogical, but after the distortions are analyzed and the seemingly huge gaps bridged over, the latent content of the dream clearly shows sense and logic and represents "the hidden fulfillment of a repressed wish." Here, too, we must add that notwithstanding some misinformed persons to the contrary, neither Freud nor any of his pupils have ever claimed that every dream must connote something sexual.

What was said of the dream holds true for his *Psychopathology of Everyday Life*,¹³ and for his *Wit and Its Relation to the Unconscious*.¹⁴ These very interesting and epoch-making works were also direct products of his investigation of neurotics. The former work definitely removes the hiatus between the so-called normal and the neurotic by showing that like the phobia, hallu-

cination, or delusion, such faulty actions as simple lapses in speech, reading, writing, misplacing objects, forgetting names, and similar faulty actions, all have a definite meaning. They are all psychically determined and express the true, albeit unconscious, feelings of the person in question. In his book on wit Freud demonstrates that the witticism in the form of harmless or tendency wit, or in the form of a pun or joke, all show the same mechanism, the same technique, as the dream and psychotic symptoms. 'Wit is a product of civilization; wherever there is civilization, which means renunciation, we find a sense of humor. For wit permits us to draw pleasure from otherwise forbidden sources by utilizing the distortion mechanisms of *displacement, indirect expression, condensation, representation through the opposite*, etc. All these and other problems came into being in the course of his work with neurotics, and as neither dreams, wit, or faulty acts are morbid manifestations, but special expressions of the normal human psyche, psychoanalysis thus fills the gaps between the so-called normal and neurotic, and amply demonstrates that the same dynamic processes are active in both. The neurotic, or even the psychotic, differs from the so-called normal only in degree.

Having discovered the extensive ramifications of sex in normal and abnormal life, Freud found it necessary to correlate the infantile sexuality with the so-called adult normal sexuality and with the abnormal sex life of perverts. This was accomplished through the broadening of the whole concept of sex. Instead of sex, he uses the term, *libido*.

Libido, according to Freud, is the dynamic expression of the sexual instinct; it represents that quantitatively changeable force of the sexual instinct which is directed to an object. It comprises not only sexual love with sexual union as its aim, but also whatever is generally designated as love, such as self-love, love for parents and children, friendship and philanthropy in general,

¹² Translated by Brill.

¹³ Translated by Brill.

¹⁴ Translated by Brill.

as well as attachments to concrete objects and abstract ideas. Viewing sex in this broad sense of libido, one can easily follow the sexual instinct in all its ramifications in the child, in the normal adult, in the perversions, and in the neuroses.

To be sure, much had been written on sex, especially on the abnormal part thereof, before Freud came on the scene. In a footnote to the first chapter of his *Drei Abhandlungen zur Sexualtheorie*¹⁵ Freud mentions the fact that many of the views expressed in his work concerning sexual aberrations were based on the works of v. Krafft-Ebing, Moll, Moebius, Havelock Ellis, Näcke, v. Schrenk-Notzing, Löwenfeld, Eulenburg, Iwan Bloch, and Magnus Hirschfeld, famous sexologists of his time. We are also mindful of the fact that Stanley Hall, Kiernan, Lydston, W. J. Robinson and others of our own country have also contributed much to our knowledge of the sexual instinct, but Freud's merit lies in the fact that instead of isolated phenomena, or special problems, he depicts the concept of sex as a unified libidinal evolution of the individual.

And following this evolution he clearly shows us that even such abnormalities as sadism, masochism, homosexuality, exhibitionism, or any of the other so-called perversions have their normal roots; they all began during the most tender age of the child. For unlike his predecessors who usually confined their observations to the sexuality of adults and ignored the child as a sexual object, or considered as monstrosities any of his sexual activities, Freud begins with the infantile sexuality. Man's sexual life does not begin with puberty; sexual functions can be demonstrated in early childhood, but like the functions of speech or locomotion, they must undergo a definite evolution before they attain maturity.

Briefly, Freud divides the human sexuality into two phases, the *autoerotic*,

or self-gratifying phase, which reaches its height at about the age of five, when it is interrupted or inhibited by a so-called *latency period*, and a second phase, which begins to manifest itself at the age of eight to nine years, and attains its height at puberty, when the genitals have developed their adult functioning. Freud, thus, assumes that there is a bi-temporal epoch in the sexual evolution of man. He also makes a definite distinction between *sexuality*, which begins with birth, and *genitality*, which begins with puberty, after the genital system has become matured.

For the sake of clearness, let us also define the two terms which Freud frequently uses in his discussion of sex, namely—*sexual object* and *sexual aim*. The former signifies the person or object from whom sexual attraction emanates; the latter signifies the act for which this attraction strives, i.e. the act of coitus. Thus, the goal of normal life is to reach genitality and find a mating object, and any deviation from the object or aim (genital functioning in coitus) is abnormal and may constitute a perversion, or in some predisposed persons a *neurotic symptom*, which is nothing but the *negative of the perversion*. Moreover, in order to understand the nature of the neurosis we must bear in mind that besides object libido there is also an *ego* or *narcistic libido*, wherein the libido is mostly retained by one's own ego or withdrawn from the object back to the ego. Many normal, as well as pathological processes in the psychic life, are due to the kind of interchange between these two forces. Thus, the *transference* neuroses, hysteria and compulsion neuroses, which are mainly dominated by object-libido, are most accessible to psychoanalytic therapy, while the *narcistic* neuroses, the deep melancholias, schizophrenias and paranoid states, which are still mainly under the spell of ego libido, are difficult to influence analytically, although some can be socially adjusted.

Moreover, the path of the libido to the primacy of the genitals and to object

¹⁵ *Three Contributions to the Theory of Sex*, translated by Brill, Monograph Series, Journal of Nervous and Mental Diseases.

finding is not always simple and direct. For the sexual instinct, whose dynamic expression in the psyche is the libido, consists at first of partial impulses and components, which only gradually become united into an adult genital organization. These partial impulses obtain gratification from some bodily organs, especially from those designated as *erogenous zones*, through oral, anal, and genital activities, such as thumb-sucking, masturbation, and the eliminative functions, but with the development of puberty they become partially repressed and sublimated while the rest is finally subjugated to the primacy of the genitals.

In other words, the sexual life of the child is disseminated and objectless, and depending on the source of outlet, can be divided into three pregenital organizations. The first is the *oral*, which is associated with the self-preservative instinct, the second is the *anal-sadistic*, in which the partial impulses of aggression (sadism) and the *anal zone* are most active, and the third is the *phallic* phase. The last, already evidenced in early life through the child's recognition of only one genital, the penis, finally leads to the primacy of the genitals. It is quite obvious that any impediment in the libidinal path of these pregenital organizations may cause a weakness or a *point of fixation* to which under special conditions the libido may later return (regression). Such fixations, therefore, play a great part as dispositions for later eruptions of repressed strivings; that is, for the development of later neuroses or perversions.

To illustrate how adjustments or maladjustments come about, that is, how a fixation in a pregenital state later leads to a perversion or a neurotic disturbance, it would be necessary to go into clinical material, which cannot unfortunately be done here. All that we can stress here is that the question of health or sickness depends on the individual's infantile adjustment to the parents. For during the first years of

childhood (2—5), as the child's sexual strivings become increasingly coordinate, they are directed in the case of the boy to the mother. Having centered all his strivings on her, it is quite natural that he should resent any intrusion or rivalry from the father, and therefore, becomes hostile to him. This affective relation of the child to the two parents, which constitutes the so-called *oedipus complex*, plays a most important part in the lives of all civilized men. As Freudians, we can state that he who masters and overcomes the oedipus complex is normal, while he who adheres to it, and cannot detach himself from his parents, becomes neurotic.

The struggle for adjustment which takes place during the oedipus situation, therefore, plays a leading part in the formation of the whole *psychic apparatus*, which we formulate with Freud as follows: At birth the child shows a neutral, unorganized or lawless mentality, designated as the *id*. As he develops and is increasingly stimulated into action through *hunger and love*, that part of his *id* mentality which comes into contact with the outer world through the various senses undergoes some changes. By virtue of its continuous exposure to the hardships of life, it becomes, so to speak, hardened and endowed with consciousness. This modified part of the *id* forms the *ego* of the person. The *id* thus continues as the carrier of the primitive impulses, while the *ego*, having become acquainted with the hostility of the outer world, endeavors to curb and control them. However, as the child grows older, a part of the *ego* becomes still more modified and attains a higher evolution; it becomes what we call a *superego*.

As this last change goes hand in hand with the disappearance of the oedipus complex, the *superego* contains a precipitate of the parental commands, inhibitions, and prohibitions, especially those that were wont to emanate from the father. And, at this time the boy, so to speak, detaches himself from his mother for he no longer has to depend

on her for all his outlets. He makes peace with his father. This is accomplished through the process of *identification*. The boy, so to speak, absorbs or assimilates his father, he turns him into himself, and henceforth, he is unconsciously controlled from within by the same commands and prohibitions which formerly came from the father. This highest degree of ego evolution, the superego or ideal ego, therefore, contains what we call our *conscience*, and represents the highest attainment of civilized man.

This formulation of the mental apparatus, which is fully described in *The Ego and the Id* (English translation by Riviere, Hogarth Press, London) belongs to Freud's metapsychological works, which have appeared within the last fifteen years. Metapsychology is the psychological foundation of psychoanalysis and treats of the dynamic, topographic, and economic relations of psychic processes. Because of its terminology, which seems strange to the uninitiated, Freud has been accused of mysticism, and what not. Nothing is further from the truth. It was only natural that after heaping up facts over facts for so many years that Freud should later attempt to correlate everything into a system or orderly presentation.

Those of us who have followed him from the beginning find his metapsychological works most helpful and illuminating and see in them no signs of deviation from his former views. To say metapsychologically that a *neurosis represents a conflict between the ego and the id* is the same as saying that the neurotic symptom is the result of a conflict between a person's moral standards and primitive impulses, which one finds in Freud's earliest works. To be sure, many of his earlier views had to be modified as a result of newly discovered material, but nothing that one finds in Breuer and Freud's original communications has ever been repudiated.

None will feel more the inadequacy

of this presentation than the present writer. No justice can be done to such a vast subject as psychoanalysis in a short abstract. The ramifications and implications of psychoanalysis have impinged upon every psychic endeavor of mankind. All criticism to the contrary notwithstanding, Professor Freud and his followers have practically rewritten all the mental sciences.

A. A. B.

PSYCHOANALYSIS AND THE PROBLEM OF PERVERSIONS.

Erstwhile ideas on perversions have been completely metamorphosed by the discoveries and subsequent theories of Freud and his school, so much so that it remains doubtful whether the old word *perversion* can continue to drag along. The change becomes apparent when an attempt is made to define the word and concept of perversion. Let us pause for a moment at the definition that perversions are indecent or shocking sex activities. It becomes at once manifest that a social consideration, variable with time and place has crept into this definition. What is indecent? The best definition still seems to be the Englishman's: "It isn't done."

All these definitions deriving from ethics are nugatory to the scientist who seeks to describe and comprehend and has place neither for praise nor indignation. More fitting, but as will be seen later not altogether adequate, is the circumscription: *All sexual activity which does not serve propagation is perverted*. Homosexuality, sadism, masochism, fetishism, exhibition, peeping, and other perversions as termed and described by Krafft-Ebing, Moll, Bloch, Havelock Ellis and others, can be subsumed under the same definition. Of course, even kissing would then have to fall under this definition should it portend an aim in itself not adhering to the more unassuming part of initial pleasure. To determine the borderline between normal and perverted forms of pleasure is not a light task.

Freud divides sex-pleasure into *initial-pleasure* and *end-pleasure*. With

the exception of homosexuality in its isolated position all so-called perversions must be declared normal if they portend the purposive arousing of sexual interest for the final embrace. This is obvious in the kiss. But who can fail to discern a rudimentary sadism in the "conquest" of the sex object in physical or mental romping? Devotion, the will to serve, even the will to suffer are resident in every love.

Such accomplishments are usually construed as evidences of affection. When the lover requires no further sexual gratification, they are products of masochism. The same holds true for fetishism, one of the most peculiar forms of perversion. Fetishists—they are mostly men—do not desire the woman in toto; they worship only certain parts of her body or her clothing, and shrink from normal sexual intercourse. The "normal" lover also is enchanted with the perfumed note of his sweetheart. Her garter, a curl of her hair, excite him sexually. The divergence between the normal and pathological (perverted) forms of fetishism is again obviously the borderline between initial-pleasure and end-pleasure, a borderline never trespassed by the pervert. Beauty seeks to adorn itself for the purpose of display: exhibition. The eye seeks to behold the beloved. The activity of the peeper is described with the Greek scientific word "*scopophilia*." The perversion lies in a *fixation* on a preparatory action, which in normal persons serves as the introductory part of sex-life. In addition, the importance of this action is invariably singularly magnified.

The nature of perversions appeared in an entirely new light when Freud drew attention to the fact that the child has a sex-life even before puberty which prepares the definite sex-life of the future and aims at it. As the sex glands of the child cannot as yet serve propagation, every movement of the child—recognized by Freud as sexual—would have to be regarded as perverted in accord with the definition offered

above. Indeed, Freud called the child polymorphous-perverted, whereby he intended to emphasize that none of the actions which in an adult are considered perversions are alien to the age of the child; not even those for which an erect penis is required (a not too rare phenomenon in children).

Particularly conspicuous even in the suckling stage, is fetishism in infants who refuse to go to sleep without a pacifier, a nipple or other small object clutched tightly in their tiny hands. This infantile fetishism can be traced back to the desire for the mother's breast, the fountain-head of the child's beatitude. Later in life this fetish becomes a phallic symbol. A child who never indulges in cruelty (sadism) cannot be called normal. The same is true of a child that rejects affection in the form of caresses, terms of endearment.

The instinct of investigation springs from the child's passionate desire to look. Very early an active element identical with exhibitionism is resident in the natural shamelessness of the child, that absence of shame which puts the human infant on a level with the animals.

Should we decide to call masturbation a perversion—it falls under the definition above given because it does not serve propagation—its root in childhood is indubitable. Freud separates three periods of onanism, of which the first one, the suckling's masturbation is merely mechanistic; the second reaches its peak after the third year and vanishes usually but not always after the sixth year of age. The third period usually begins in the years immediately following puberty. If onanism merely breaches the gap between longing for a sex-object of the opposite sex and the fulfillment of this longing, it is physiological, i.e. normal. When masturbation becomes an aim in itself, preferable to any satisfaction which might be derived from a sex partner of the opposite sex it can be regarded as a perversion from the point of view of the stated definition.

Two discoveries of Freud, in addition to which there is a concluding third, are indispensable for a clear comprehension of the problem: the discovery of the *erotogenic zones* and the development (evolution) of man's libido from *partial instincts* to a sexual harmony which controls the sex-life of the adult unless it is pathologically disturbed. Thus Freud's conclusion was that the libido of man, the energy with which he attempts sexual pleasure, is not necessarily connected with the principle of propagation. The mere existence of perversions makes this fact manifest, yet it was overlooked before Freud, or at least not recognized in its importance; the libido to a considerable degree is independent of the procreative instinct.

The libido is not attached to the genitalia at the outset. The infant derives pleasure from his lip zone (also called his first sense organ). His first experience with the outside world is through his lips. Ear and eye come later. Together with his food and as a reward, so to speak, for the practice of taking nourishment, the child receives pleasure from his lip zone. This pleasure becomes independent of alimentation in thumbsucking. Freud has called the lips an erotogenic zone because the pleasure obtained therefrom reappears later in life as an initial pleasure and in some cases as a sexual aim in itself. Psychoanalysis has drawn attention to the oral zone (os = the mouth). More will be said later about the psychological importance of this and other erotogenic zones. They have made the study of the deeply despised perversions a center of individual and social psychology.

The next erotogenic zone in our development is the exit of the intestines (the anal zone). The movement of the bowels is—next to the intake of food—the most important function, or it might be more pertinent to say the most important duty of the infant. The bathing of this region of the body or the irritation caused by the feces and urine

prepare the stimulation of this erotogenic zone in its position so close to the genitalia. In the case of constipation which the baby often produces artificially by withholding the feces and postponing the movement, the passage of the enlarged fecal column is a pleasurable sensation.

One of the most staggering discoveries of Freud was the psychological connection between feces and money. This he found and proved from an enormous amount of material derived not only from his psychoanalytic practice but from folklore, mythology and colloquialisms such as "dirty miser." Psychoanalysis has shed light upon the fact that the man who lives for his gold, caressing and kissing it as he would a woman, belongs to the pervert class. When it becomes manifest that his relation to his money is libidinal, his attitude may be subsumed under the definition which declares sexual actions not serving the principle of propagation perverted.

The pleasure of peeping is traced back to an erogenuity of the eye. The pleasure derived from destruction springs from an erogenuity of our muscles of which the hand is the executive organ. The genitals themselves are an exquisite erotogenic zone which early, and under normal conditions permanently, becomes prime (pre-genital and genital sex-life). The theory of the erotogenic zones offers a biological and somatic basis of sex life upon which one can erect sexual psychology. Desire to destroy (sadism) is, according to the findings of psychoanalysis, connected with the oral and anal zones. Hence, there is oral and anal sadism. Considering that the jaw is the chief weapon of the animal kingdom and the act of emptying the bowels is the ejection of the residues of destroyed food, the above theory should not occasion surprise.

The baby is *autoerotic* or primal narcissistic insofar as it does not as yet recognize the value of living objects outside of himself as sources of pleas-

ure. The baby obtains his pleasure from his own body. The only object of importance in the outside world, the mother's breast, is not regarded as such by the baby, hence it is confused with all other objects which he tries to put into his mouth. Psychosexual development then leads to pleasure in destroying (sadism) which instinct controls a certain period of infantile life. Even after the objects outside (mother, father, nurse) are acknowledged and loved, this love remains "ambivalent" for a long time.

The difference between the sexes, as postulated by civilization for normal sex-life is not sufficiently clear to the child who frequently displays a preference for his own sex until a long time after puberty. This bisexual phase which can also be called homosexual, was detected even before Freud. It was too conspicuous to escape attention. All that the conservatism of the Victorian Age could accomplish in this respect, was to deny the sexual component underlying these enthusiastic and affectionate friendships and where denial was impossible—in cases of mutual masturbation—they prated of the "dregs of humanity."

During the storms of puberty, all the partial drives of the infantile sex-life flow together and form normal sexuality and love. All sex pleasure of the child becomes initial-pleasure and a new end-pleasure is reached soldered with the aims of procreation. None of the preparing phases of childhood gets lost completely, the normal love of the adult is narcissistic, sadistic, skoptophilic and bisexual, etc.

We must add affection which stems from the reservoir of the parent-child relation and forms the essence of what is called love in the higher sense. Thus one more "perversion" enters love-life: incest. Virtues, such as truth, constancy, stability of love are engendered from the child's experience with its parents. Since it is meet to consider naked incest a perversion, it is clear that the definition given above does not

hold: sexual intercourse with close relatives is not opposed to the biological aim of propagation.

We know to-day that the germ of perverted tendencies is universal. Divergent by constitution (inherited) is the strength of such instincts as narcissism, sadism with its self-destructive component called masochism; further, the distribution of bisexuality existing in all mankind. The erotogenetic zones are also congenital in varied degrees of energy. Essential, however, in most cases—with the exception of rare extreme cases of destructive mania, masculine women and effeminate men—are the early individual experiences, the obstacles and aids encountered on the way of evolution. In every phase of libidinal evolution there is the likelihood of a *fixation* taking place which puts an end to a consistent harmonious development toward normal sex-life and drives it toward a wrong, undesirable direction. Sometimes there are several points of fixation. After vain attempts to overcome these fixations (unsuccessful love affairs, economic distresses, disappointments of all kinds) there are *regressions* to apparently forgotten phases resultant in homosexuality and other perversions.

If a constitutionally too strong partial instinct which in itself represents a danger for the totality, is exposed to unfavorable experiences from the side of education, the result in many cases will be perversion. The ego, however, usually struggles against manifest perversion with such energy that the partial instinct vanishes from the conscious and is repressed, reappearing in the form of morbid hysteria or compulsive symptoms. These symptoms no longer resemble the original perverted instinct which they replace and represent. Hence, sadistic tendencies may lead to complete paralysis, an over-strong oral demand may result in stuttering, a peeper may become a fastidious crank. To delineate the phenomena of repression in detail would lead into

the midst of Freud's psychology, surpassing by far the subject of perversions. It is significant that Freud has called the neurosis the "negative of the perversion."

Of particular importance is the fact that the despised and consequently dreaded perversion (the partial instinct which pushes forward) may be practised in a form which metamorphoses a social danger into a highly praiseworthy social accomplishment by way of *sublimation*, i.e. desexualisation of a sexual desire. Our culture, to offer an example, cannot progress without a certain amount of sadism. Hence, the originally sadistic impulse can be utilized in numerous professions: surgery, fishing, hunting, soldiery, worker in any of the constructive-destructive fields with or without bloodshed. The impulse to besmirch can become effectual in painting; an oral type may become an orator, singer, poet. The theory of perversions, consequently contains a problem which embraces the performances of the contemptuous fool as well as the highest achievements of man and superman.

Sigmund Freud, *Three Contributions to the Theory of Sex; Introductory Lectures; New Introductory Lectures*.

Fritz Wittels, *Critique of Love; Freud and his Time*.

F. W.

PUBERTY GLANDS. Term devised by Steinach for the interstitial cells of the testes (Leydig's cells) in the male, and the lutein cells of the ovary in the female.

PYROLAGNIA. Sexual excitement aroused by the sight of conflagrations. Also known as erotic pyromania (passion for fire). Thus arson, the impulse to set fire to dwelling-houses and other structures, at times has a sexual motive.

Sadistic arson is discussed by Iwan Bloch: *Beiträge zur Ätiologie der Psychopathia sexualis*, 1902-03, ii, 116-18.

QUAESTUARIA. From Latin, *quaestus*, gain, profit; *quaestuarium*, money-making, mercenary. A term for pros-

titute, employed by Ulpianus, in the *Digest*, iii, 2, 4; he also uses it as an adjective qualifying *mulier* (woman), as in the *Digest*, xxiii, 2, 43. Seneca (*De beneficiis*, vi, 32) employs *quaestuarium* as a substantive, for prostitute. *Quaestuariae* to the number of 32,000 were counted in a census taken during the reign of Trajan. The related form, *quaestuosus*, will be found in Plautus (in the *Miles*).

RACE ADMIXTURE IN SOUTH AFRICA

1. INTRODUCTION.
2. THE NATIVE RACES OF SOUTH AFRICA.
3. " "
4. THE EUROPEAN ELEMENTS IN AFRICA.
5. EURAFRICAN ADMIXTURES.
6. ASIATICS AND AFRO-ASIAN ADMIXTURES IN SOUTH AFRICA.
7. EURASIAN ADMIXTURES.
8. SOME REMARKS ON RACIAL ADMIXTURE AND ITS EFFECT IN SOUTH AFRICA.

The population of the Union of South Africa is of great ethnic and genetic interest, in that it is composed of several series of fusions of peoples. One series is the result of impacts of waves of different types of native peoples on one another, some known to date back to the tenth century. Another is the result of contacts of a succession of white emigrants to South Africa on each other. Yet another is the Colored population resulting from intermarriages, especially in the past, of various whites with native peoples of different origins, now being continued by marriages of Coloreds with whites. A further series results from the unions of natives and also Colored people with the descendants of certain Asiatics, who, brought as indentured laborers to South Africa, remained in the country and made it their home. There are other race admixtures resulting from hybridization between different Asiatic elements in the country and between Europeans and Asiatics, but at present these are small numerically.

In South Africa the white population is living among a negroid one, roughly

four times as numerous as its own. The problem is whether it can maintain itself as a white race or whether it will become submerged by miscegenation. Laws are now being enforced against marriages between whites and natives, but there are none against unions between white and Colored peoples and such unions are now occurring.

The officially estimated mean population of the Union of South Africa for 1933 was 8,369,200 persons, comprising 1,889,500 Europeans, 5,681,100 native people, mainly Bantu, 196,400 Asiatics, of whom over 80 per cent. are in Natal and 602,200 Colored persons, 90 per cent. of whom are in the Cape Province. If Rhodesia and South West Africa are included, the proportion of natives to whites is increased.

In discussing race admixture in South Africa, it is necessary to consider the various elements giving rise thereto and their actions and reactions on each other.

The white people who first came in contact with native peoples in South Africa were Portuguese, the Cape of Good Hope having been discovered by Bartholomeu Diaz in 1486, while Vasco da Gama rounded the Cape in 1497, skirted the coast and reached and named Natal. Saldanha in 1503 discovered Table Bay. English ships first visited Table Bay in 1591 and the first Dutch fleet appeared in South African waters in 1595. In 1620 the Cape was annexed by the English but was not garrisoned. The Dutch at that time had possessions in the East Indies and required a provisioning depôt en route. South Africa seemed suitable and the Dutch East India Company sent out van Riebeeck in 1652 and a settlement was begun at Cape Town and the Dutch settled the Western Cape areas during the next hundred years. After sundry conflicts, in 1795 Cape Colony was surrendered to the English, who founded settlements in Eastern Cape Colony at Grahamstown in 1812 and Port Elizabeth in 1820. In Natal, Durban was founded in 1835. The early English colonists, like their Dutch predecessors, had many conflicts with marauding natives, as will be mentioned later.

THE NATIVE RACES OF SOUTH AFRICA

The principal elements in the South African native population are the Bushman, the Hottentot and the Bantu, who arrived in South Africa in the order indicated. Each has had effects on the others by warfare, followed by absorp-

tion of the conquered into the victor's tribes.

The Bushmen are a primitive people, short but slim, muddy yellow in color, with small tufts of rusty brown woolly hair, giving a peppercorn appearance. Their skin is greatly wrinkled, their foreheads low, cheek-bones prominent, eyes small and sunken and ears with very little trace of lobes. Their noses are small, flat and broad; their jaws only a little projecting. They have inward lumbo-sacral curvature making the buttocks prominent. Socially, they are nomad hunters, users of bows and poisoned arrows, independent folk who do not build huts but live in rock caves and clefts or under trees. They are artistic, makers of rock paintings. They use an isolating, non-inflectional language, with characteristic clicks.

The Hottentots are of medium stature and slight build, with small hands and feet. They are reddish-yellow in color. Their heads are narrow, with black, woolly hair, high cheekbones, hollow cheeks, pointed chins, eyes wide apart, broad, flat noses and ears with moderately developed lobes. A fair degree of prognathism is present. The lumbo-sacral incurving is marked and there is characteristic steatopygia. Socially, they are nomadic pastoral people, who group their beehive huts in kraals, have tribal organizations and use an Hamitic inflectional language, rich in clicks.

The Bantu form the greatest native element in the population. They are negroid and dark-skinned but browner than the Negro. They are well-built and many tribes are rather tall. Their hair is black, rather short, crimply or woolly. Their cheeks are full, eyes large and prominent, lips thick, noses platyrrhine and jaws prognathous. They have large hands and feet. The Bantu came to South Africa in a series of waves from the north, where Semitic and Hamitic blood had been infused from contiguous tribes into their negroid stock. Socially, they were rather warlike peoples, who sent out raiding parties to rob other tribes of their cat-

tle, the latter being their criterion of wealth and means of obtaining wives. They build kraals, often of considerable size. Their languages are formative and inflectional, with many linguistic groups and tribal dialects.

The Bantu, as found in South Africa to-day, is usually, if not always, a blend of numerous tribes. Waves of immigration, in which sections drove out others before them and occupied their land, and intertribal wars, in which the women of the vanquished were absorbed into the tribes of the conquerors and the men killed or forced to flee as exiles, have resulted in dispersals and varying geographical distribution of the people, as well as extensive interhybridization among them. Naturally, conflicting accounts of the early native races are extant, and only an outline, to give the necessary background, indicating how the present tribes have come to be in South Africa and their miscegenations, can be given.

In the earliest days of South African history, the Bushmen occupied most of the mountainous districts. Armed with bows and poisoned arrows, they were more than a match for the pastoral Hottentots, who were numerically stronger, but, ultimately, the little marauding Bushmen were driven away by the whites and the Bantu and forced to retreat to the Kalahari and South West Africa, where now they are chiefly found. Bushmen were sometimes called Mountain Hottentots by some of the early observers.

The Hottentots in the tenth century were known to Arabian geographers as Wakwaks or Wa-Khoikhoi and at that time had pushed south of Sofala on the East Coast of Africa. Another group of Hottentots was near Benguela on the West Coast in 1667 and probably represented another stream. When the Dutch settled at the Cape, the Hottentots who had arrived by the south-east route, were not known to range beyond the Orange River. In the sixteenth and seventeenth centuries they were chiefly in the valleys of the Karroo rivers.

Large numbers of sub-tribes were recorded in the early days of white colonization but these have largely disappeared. Numerous migrations of Hottentots northwards and northwestwards occurred as European occupation increased, some tribes dying out and others amalgamating with other tribes in the process. There are now two chief sections of the Hottentots, the Korana and the Namaqua or Naman, living chiefly in the western part of Southern Africa.

The Bushmen and Hottentots are considered by some authorities to belong to a common Bush race. It has been suggested that the Hottentots may have originated in the past by hybridization between Bushmen and some northern Hamitic negroid race before the migration of the Hottentots began. However, at the present time, there are very few pure Bushmen or Hottentots in the Union of South Africa.

The dominant native race of South Africa, the Bantu, arrived there in a series of waves of invasion from the north, perhaps from East Central Africa. Arab and Persian traders in the eighth century knew the Bantu under the names of Kafir (infidel) or Zeng (black). Probably at this time they were living in the present Northern Rhodesia. In the tenth century El Masudi recorded that Bantu tribes were known to be around Sofala, having crossed the Zambesi but not the Sabi River, the Hottentots or Wakwaks being then to the south of them.

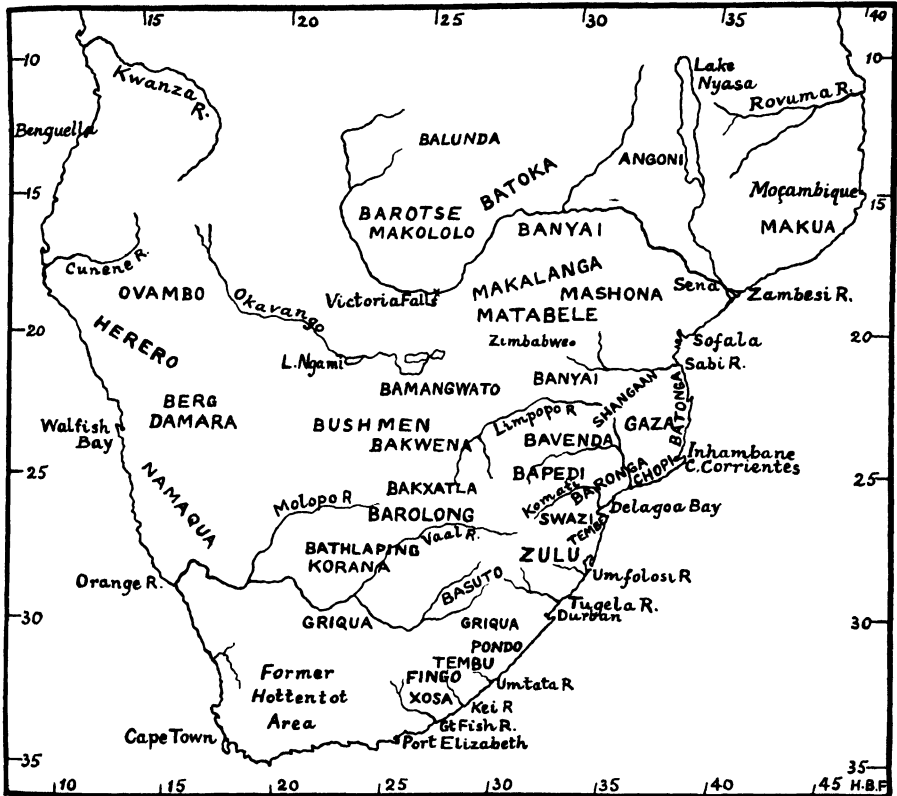
Apparently there were three main streams of Bantu migrating southwards by the west coast, the east coast and by more or less central routes, conquering and amalgamating with their predecessors as they went.

The Bantu migrating by the western route settled south of the Cunene River and around Lake Ngami and westward to the Atlantic. They became known as Hereros and included the modern Ovambos or Ambos and sub-tribes. Under European rule, especially during German domination in South West Africa, they caused much trouble, became scattered and a few entered the Transvaal.

The East Coast migrations were the most important. Of these, four linguistic groups can be distinguished and they correspond to

some extent with waves of invasion. Two groups, the Makalanga and Bechwana, travelled inland and more central and two, the Bathonga or Baronga and the Zulu-Xosa or Zulu-Kafir passed along the coast. Many variations in the orthography of the names of tribes occur, those used here being generally recognized or recognisable, though recently more phonetic designations have been used in some cases. For convenience the movements of these groups with some of their subdivisions may be considered

The BaRotse and BaLunda crossed the Zambesi at different periods during the eighteenth century, and are probably Makalanga. The BaRotse, now the dominant tribe on the Upper Zambesi in Northern Rhodesia, according to Coillard, came from the east and claim kinship with the BaNyai. Early in the nineteenth century, the MaKololo, a section of the Basuto who are members of the Bechwana group, fought against and subdued the BaRotse, who, however, successfully revolted against



Map showing approximate disposition of certain South African Native Tribes after the Zulu conquests. (ca. 1840.)

separately and their later distribution indicated on the map.

The Makalanga group includes a series of tribes such as the MaKalanga in the west, the BaNyai in the north and the Mashona in the east of Southern Rhodesia. In the sixteenth century the chief of the MaKalanga was known as the Monomotapa, who ruled over a great empire in what is now Rhodesia. His subjects raided south to the Matopo Hills. In the past, the Mashonas occupied the Sena district, whence they moved south. The BaNyai were along the south bank of the bend of the Zambesi and some have migrated south.

them in 1865. The BaToka, living in the middle Zambesi basin, probably are members of the Makalanga group.

The BaVenda are a composite group of tribes now occupying the northeastern part of the Zoutpansberg district of the Northern Transvaal. They left Mashonaland perhaps about the end of the seventeenth century and conquered and absorbed the previous inhabitants of the Zoutpansberg. The BaVenda have a definite Makalanga strain in them as well as some Bechwana.

The Bechwana group includes a series of tribes having similarity of language and cus-

toms, their name meaning "the people who are alike." Their language is different in pronunciation from other Bantu tribes. The BaLala and BaKalahari were the pioneers among them, penetrated south, and, mixing with the Bushmen, came to live near Potchefstroom. Other Bechwana tribes reached the neighborhood of Rustenburg and others settled around Kuruman. The Langebergen, a region west of the junction of the Vaal and Orange Rivers, was the most southern point reached by the Bechwana, this being occupied by the BaThlaping, who intermarried with the Koranas, a Hottentot people with some Bushman admixture.

The BaRolong were the next wave of invaders. At first important, they subsequently broke up into a number of tribes, some of whom had constant feuds with the Basutos under their great chief Moshesh. The BaMangwato are a branch of the BaRolong, who settled in the Bechwanaland Protectorate in what is now known as Khama's country. The BaKwena, another important tribe, gradually moved into the Northern Transvaal. Internecine warfare occurred and they split up. Some passed southwards, settled on the Caledon River and the surrounding areas and became the Basutos of modern Basutoland. A section of the Basutos, the MaKololo, as already noted, invaded BaRotseland. Another section, the BaKxatla, settled near Mochudi in Bechwanaland and were known later as Linchwe's people. The BaPedi in the Transvaal are Sekukuni's people. There are other Bechwana tribes that cannot be mentioned here.

The AmaThonga, BaThonga or BaRonga group includes tribes who speak dialects of a language called Thonga or Tonga. They were migrants from the north who drove out and absorbed the previous occupants. The BaTonga were known to be occupying the district between the Sabi and the Inhambane Rivers in the sixteenth and seventeenth centuries, and about 1560 attempts were made to establish Christian missions among them. Another division, the BaChopi, still occupy the country between Cape Corrientes and the Limpopo. The Tembe, with several offshoots in the Komati River basin and a little south, speak the SiRonga dialect, but they are said to have been of Kalanga extraction. Much raiding and intermixing has occurred and the Thonga group now form the natives of the Inhambane and Lourenço Marques districts in Portuguese East Africa. Some reached the adjacent territory of Natal but were raided by the Zulus and fled over the Lebombo Mountains into the Lydenburg district of the Transvaal. The so-called Shangaans, who have much Zulu blood, speak Transvaal Thonga.

The great Zulu-Xosa or Zulu-Kafir group also came from the north and in the tenth century were reported to have been near Sofala. In 1553 they were definitely farther

south and shipwrecked seamen found Bantu tribes, either Zulu-Xosa or their Xosa division, in the region between the Umfolosi and the Umtata Rivers. The first wave of the Zulu-Xosa invasion along the East Coast was by tribes whose chiefs had a common ancestor. They were the AmaXosa, AmaPondo, AmaTembu and AmaPondumise (often termed Xosa, Pondo etc.). They advanced as far as the Great Fish River, encountering Hottentots on the way. They were warlike and between 1779 and 1877 they fought nine Kafir wars against the whites. When finally subdued, they were settled in the Transkei, which is maintained as a native reserve.

In the seventeenth century, the Great Abambo group of tribes occupied Natal. About 100 years ago, some 95 of these tribes were known. There are somewhat divergent accounts of these tribes and of the sanguinary conflicts among them at the beginning of the nineteenth century. One warrior tribe was the Vatwah or Endwandwe, another the Mtetwa, of which the Zulus were a section. The Zulus became a great raiding people, particularly under their chiefs, Tshaka and Dingaan.

Tshaka, who had a great capacity for leadership and organization, built up the Zulus into a very formidable warrior nation by rigorous selection and discipline, and from 1818 to 1828 the Zulus under his leadership maintained a reign of terror. Following on Zulu raids, some Abambo tribes fled and united under the name of Swazis; the Vatwah, driven north beyond the Zambesi, became the Angoni; other tribal remnants became the Gazas. Internecine strife occurred among the Gazas and one section of them, who mixed with the Thongas, became known as the Shangaans. Revolts occurred against Tshaka from time to time and some Vatwah, having joined revolt against him, they united as the MaTabele, ravaged the Transvaal, annexed the land of the Monomotapa and became the foe of the Mashona. In 1828 Tshaka was killed by Dingaan, who succeeded him. In 1838 Dingaan massacred some Dutch trekkers or emigrants, was then defeated by the Dutch and fled to the Swazis, who killed him. The Zulus were subdued by the British in 1879. Five other large Abambo tribes, who were defeated by the Zulus, fled south, encountering the pioneer Xosa, Tembu and Pondos, with whom they fought. All the defeated parties, with remnants of other tribes, united together and were known as Fingoes, meaning the destitute ones, and these were ultimately protected by the British and settled peaceably.

From the foregoing, it is evident that though distinct tribes are now in existence in South Africa, yet in practically all of them, intertribal admixture or hybridisation has taken place. Tribal wars of conquest and raids were usually concluded by the killing of the captured male vanquished and the absorp-

tion of their women into the tribes of the conquerors. While a general racial type may have been perpetuated, yet differences occur among its components and, at the present time, many natives, especially in the Cape Province, have little idea of their true tribal origin. Inter-marriage between tribes has also complicated the native race problem, as well as admixture with Non-Bantu peoples. Some specific cases of hybrid peoples of mixed native origin are known, and may now be mentioned.

NATIVE HYBRIDS

Among known native hybrids may be noted the Korana, who are Hottentots with some Bushman admixture. Early Bantus, with admixture of Bushman and Hottentot blood, constitute the Berg Damara, who speak a Hottentot language. Near Potchefstroom is a hybrid tribe, the BaTamaka, of mixed BaLala and Bushman origin. The cattle herds-men of the BaMangwato are hybrids of Bushmen and BaKalahari, known as the MaSarwa or Vaalpens. The BaThlaping are a Bechwana stock who married Korana wives. In such crosses the Bushman and Hottentot (or Bush) characters are dominant to the Bantu. The Amabae (or BaMbayi) in the Lydenburg district have resulted from inter-marriage between Basutos, Thongas and Swazis. The Tambuki are hybrids between Bushmen and Tembu.

"Ethnic melting pot" areas occur in South Africa. Among these the Kalahari may be mentioned. Here Bushman-Hottentot admixtures have been impinged on by Hereros from the north and by Bechwanas from the east. Another hybridisation centre is the area around the junction of the Vaal and Orange Rivers as far as the Nokana River on the west and Kuruman and Taungs in the north, where Bushmen, Korana Hottentots and Bechwana such as the BaThlaping come together and fuse. The Northeastern Transvaal, extending into Portuguese East Africa, is another melting pot, where BaVenda, BaPedi, Thonga and Zulu intermixtures have occurred. Under British and South African rule, tribal warfare is now unknown. But urbanisation of the natives and particularly of the men,

is helping to break down tribal distinctions and tribal prejudices, though the latter are still strong among certain tribes.

THE EUROPEAN ELEMENTS IN SOUTH AFRICA

The white population of South Africa, originally from Europe, is predominantly composed of Dutch and British but there are many other elements. The early Portuguese navigators did not settle permanently. The Dutch under van Riebeeck began settlement in 1652. From 1658 they imported slave labor, largely from the Dutch East Indies, some of the descendants of such laborers being the Cape Malays of today. French and Belgian Huguenots arrived in 1688, but their language was soon suppressed and they became absorbed into the Dutch population, then confined to the Western Cape. A number of Afrikaans (South African Dutch) names to-day are of Huguenot origin. About the middle of the nineteenth century, Germans settled in the Central and Eastern Cape Province (then called British Kaffraria) and still form a distinct South African group.

With the development of diamond mining at Kimberley (about 1867) and of gold mining on the Witwatersrand, especially after 1886, men and women of many nationalities found their way to the diamond fields and to the gold mining areas. As in every mining area, the heterogeneous European population became reinforced by many types of native laborers and penetrated by traders, many of whom were Russian and German Jews. Development of fishing and of whaling at the Cape led to Scandinavian men coming to the ports and some settling there. Recently, emigration from the Baltic areas has added Lithuanians, Latvians and Estonians to the population, together with peoples from Central Europe. The Asiatic people introduced as laborers into South Africa and now settled in the country will be considered later.

For the last few generations, many admixtures of European peoples have occurred in South Africa. Predominantly there is the British-Dutch cross, but other crosses involving members of practically all European nations have occurred. The heterogeneous assemblage of Europeans seems to show signs of blending into a more or less homogeneous congeries under the name of South Africans, and among the younger people the country of origin of their ancestors often is unknown.

One somewhat extreme case of intermarriages involving many white races in a South African family is as follows: The father of the S. family is a Frenchman from Southern France. His wife is three-quarters German and one-quarter French and came from Alsace-Lorraine. They settled in South Africa where all their children were born. The family consider themselves South Africans, English being their home language. The eldest daughter is married to a South African of Serbian origin; the second daughter is married to a South African Dutchman; the third daughter married an Englishman in Rhodesia; the fourth is the wife of a Scotch Colonial South African; the fifth daughter married a man of mixed European parentage, his father being a Greek (the third generation in South Africa) and his mother Scotch, while the youngest daughter is engaged to an Italian who was born in Johannesburg. The only son of this family is married to a woman whose father is of Swedish descent and mother of Polish origin, the woman herself being the third generation South African and speaking only English and Dutch (Afrikaans). Intermarriage between South Africans of varied European descent is obviously adding new hybrid elements to the population.

EURAFRICAN ADMIXTURES

The Eurafrian race, popularly termed Cape Colored or Colored, is about equal in number to one-third of the white population of the Union of

South Africa. They are found chiefly women taken into the families of early in the Cape Province. Hottentot white colonists, their Malay servants and slaves, and Bantu women of various tribes who became servants, mainly were the Cape Colored progenitors. In the Western Cape, Hottentot women seem to have predominated, and in the Eastern Cape Province, Xosa, Fingo and Tembu women (the latter being the native beauties) intermarried with many types of European males. Visiting traders, small traders and peddlers on trading circuits, as well as casual visitors such as come into ports, have added to the Colored population by miscegenation.

In the past, European women have rarely married with native men, the exceptions being those in distress, such as widows with young families for which no white man would take the responsibility. Marriages between European women and Colored men also are not common. Recent legislation has forbidden marriages between white and native, but there is no law against marriage between white and Colored.

Some hybrid Colored people form distinct groups. Among the better known are the Griquas living in Griqualand, who arose from matings between early Dutch colonists and Hottentot and Bush women, and the Rehoboth Bastards, hybrids between Boers and Hottentots, who trekked north into South West Africa. Roving whites, such as Coenraad Buys, at the end of the eighteenth century, mated with native women and raised numerous progeny, who form groups in various parts of the country, ranging from the Cape to the Northern Transvaal.

For some sixteen years, I have personally investigated cases of race admixture, several generations and as many members of the family as possible being studied from their physical, mental and social aspects. Photographs, unfortunately, could rarely be obtained, owing to objections by some of the members concerned and it was essential strictly

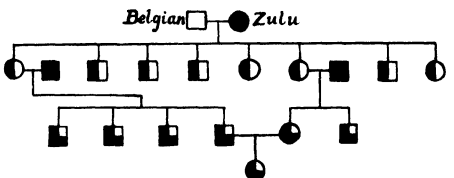
to respect such objections. A selection of families showing different types of Eurafrikan admixture is here presented. The families may be arranged broadly according to the increasing complexity of their admixtures.

FAMILY 1. Belgian-Zulu admixture (Fig. 1). A Belgian man, fair-haired and blue-eyed, married a typical Zulu woman. Eight children were born of the union. They classify themselves, approximately correctly, as white (really "white"), black and brown, basing the grades on skin color, though possessing the same proportion of white blood. In the F1 generation, the eldest, a woman, is very dark; the second, a man, is very

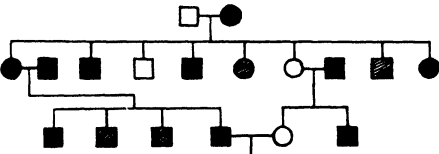
couple have thus been investigated. In skin color six approximate to the Zulu type (black), three to the European type (white), while six show intermediate skin color (brown). Comparison of these skin colors with the proportion of white blood, in each case, is significant. Socially, the "white" members are unpopular with their Colored brethren and pride themselves on being "white." The brown members appear to be despised by black and white alike.

FAMILY 2. Dutch-Xosa admixture. A Dutch man married a Xosa woman and had five children. One of their Colored sons married a Dutch-Xosa; two other children married with other Colored folks. Two filial generations comprising thirteen individuals are known. They vary in skin color from almost black to two women who pass as whites. Most of them are brown-skinned and many of them, including one of the "whites," show thick Bantu lips. The hair varies in the family from crimp to fairly straight. Dislike of the "white" members is expressed by the others. In behavior the "white" members are more temperamental than Europeans, and under stress of emotion, express their feelings in violent hysterical outbursts. The family as a whole are respectable and well-behaved.

FAMILY 3. Dutch-Hottentot admixture. A Dutch farmer married a Hottentot woman. They had two sons and three daughters. The eldest son married a Hottentot woman. Fourteen children, forming the senior F2 generation, were born to them, of whom nine are dead. The second F1 son married a Colored woman and ten children were born, of whom only one Colored woman survived. She married her cousin, a Colored man, one of the surviving sons of the senior branch of the family. These two have a family of three daughters, so far unmarried, who have oval faces, Hottentot (crimp) hair, olive skins and thin lips. They have high cheekbones and show slight steatopygia. Heavy mortality has occurred in both branches of the F2 generation.



BELGIAN X ZULU. (1) Proportions of White and Native in Descendants.



(2) Skin Colour.

FIG. 1

dark; the third, a man, is "white"; the fourth, a man, is black; the fifth, a woman, is brown; the sixth, a woman, is "white"; the seventh, a man, is brown and the eighth, a woman, is brown.

The eldest F1 woman is married to a pure Natal Zulu. They have four sons, two described as black and two as brown. The sixth F1 woman, described as "white," married a Zulu and has one black son and one "white" daughter. Cousin marriage has occurred in the F2 generation, the younger black son of the eldest F1 woman having married the "white" daughter of the sixth F1 woman. This couple have one brown baby daughter.

Fifteen descendants of the original

FAMILY 4. American Jew-Basuto admixture. The founder of this family was a peripatetic trader, Jewish, born and educated in America, and the foundress was a woman said to be a Basuto but having Pondo facial markings. Both are strong and healthy. They had nine children, four sons and five daughters, of whom three sons are dead and none of the other children is

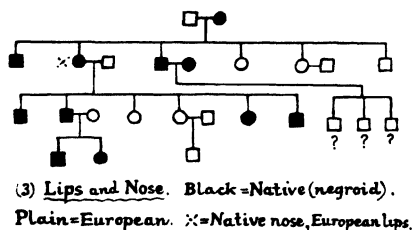
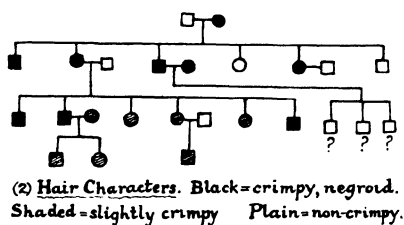
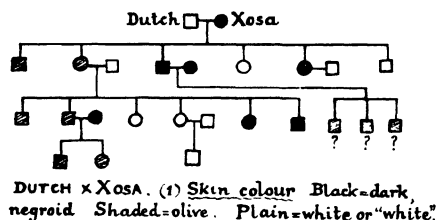


FIG. 2

healthy. Of the surviving children, the son and three of the daughters show Semitic characteristics either in features, nose or hair. The son and one daughter, both being of dark skin color, have married and the only child in each family is of poor physique. This African and non-African cross has resulted in a family of weaklings, without either the stamina of the African or the mental vigor of the non-African parent.

FAMILY 5. Danish-Xosa admixture. A fair-haired, blue-eyed Danish sailor,

engaged in whaling, married a Xosa woman. They have two sons and a daughter. Their elder, dark-skinned son looks a native and has married a Cape Colored woman of uncertain ancestry. They have two boys and a girl of the Cape Colored type, who are not very bright mentally. Of the younger F1 son nothing is known. The F1 daughter is olive-skinned, with light hazel eyes and European type of hair. She is married to a Dutch man, who has dark hair but light brown eyes. They have three relatively intelligent children. One boy with blue eyes and brown hair looks European; one boy has hazel eyes, brown hair and negroid lips and the girl combines Bantu facies with flaxen hair and blue eyes. The Danish ancestral features of blue eyes and flaxen hair have thus appeared, separately or together, in two grandchildren.

FAMILY 6. Dutch-Xosa admixture (Fig. 2). Another family, originating from the union of Dutch and Xosa, has been investigated through three filial generations. The Dutch man may have had some slight admixture of Javanese blood. The F1 generation comprised three sons and three daughters. The second son had a dark skin, the second daughter and third son light or "white" skins and the eldest son, eldest daughter and youngest daughter olive skins. The dark son married a Xosa and they had three Colored children concerning whom no more is known. Of the F1 generation, two men and two women had crimpy hair and one man and one woman had straight hair. Two men had lips and nose of native type, two women and one man had European type of lips and nose, and one woman combined native type of nose with European lips.

The eldest F1 Colored daughter married a Dutch man, thereby bringing in more white blood. Of their six children, two women are "white," one man and one woman dark-skinned and two men olive-skinned. Three men have crimpy hair and three women slightly crimpy hair. Two have European and four native types of lips and nose. One olive-

skinned man is married to a thin-lipped Cape Colored woman and their two children are Cape Colored. One "white" woman is married to a Dutch man and their son is a masked white, but has slightly crimping hair. The differential inheritance of physical characteristics is well brought out in Fig. 2.

FAMILY 7. German-Hottentot admixture. A German man, with hints of Colored blood, married a Hottentot woman. They have two sons and two daughters are largely of European appearance, fair-skinned and with light brown to hazel eyes; the other son resembles his mother but has the European type of nose. The elder daughter is married to a pure, blue-eyed German and is in terror of her Colored blood becoming known. Their infant son is said to be like his father. The other daughter, who is unmarried, has adopted another German surname and keeps away from home. Temperamentally, the three "white" members are rather conceited and overbearing, rather boastful and ashamed of the native connection, while the younger Colored son is quiet, hard-working and kind to his mother. Physically, the members of the F1 generation are weak; temperamentally, they are largely unstable. The Hottentot mother is bitterly conscious of the position of some of her children. In her own words: "The whites look down on my family; the blacks spit at us; we are outcasts."

FAMILY 8. Jewish-Dutch-Xosa-Hottentot admixture (Fig. 3). This family was founded by a Russian Jew from Odessa who married or lived with a Colored woman who described herself as a Bastard of mixed Dutch and Xosa-Hottentot blood. Three sons and two daughters have been born to them. The characteristics of skin, hair, eyes and nose of the parents and their young family are shown in Fig. 3. The eldest child, a boy, shows steatopygia, derived from the Hottentot admixture of his mother, who is heterozygous, his eyes

and hair are of Xosa type, his cheekbones are high like his mother's, but his nose is Semitic. The second boy looks Cape Colored and the youngest boy and the two girls are of the Semitic type or largely so. The Jewish influence is marked in this family.

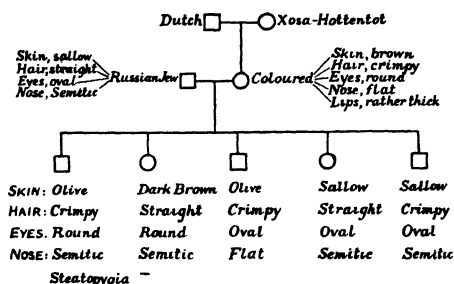


FIG. 3

FAMILY 9. Dutch-Scotch-Norwegian-Colored-Bantu admixture. A Dutch man married a native woman, probably Bantu. They have been dead many years. Three sons and three daughters were born to them. One of their sons, now an old man with blue eyes, curly hair and somewhat thick lips, who calls himself Dutch, married a Basuto. Of their six children, one daughter married a fair, auburn Scot and another daughter married a Zulu. The family of the Scot and the Colored woman number five. The eldest of them, a son describing himself as Scottish, very like his father and lighter than his mother, has married a Colored woman whose father was Norwegian and mother a Cape Colored woman. They have two quite young children of the Colored type. In the several generations investigated, all grades of color are represented and dissentient views on racial admixture occur. The European element has not improved by miscegenation. The Colored members are in an anomalous position and, realizing this, advocate Colored marrying with Colored and the maintenance of racial purity among black and white alike.

FAMILY 10. Belgian Huguenot-Polish-Jewish-Dutch-Hottentot-Basuto admixture (Fig. 4). The founder of this

family was a Belgian Huguenot who married a Polish woman of the Roman Catholic faith from Vilna. They had two daughters and one son. This son, born in Belgium, went to South Africa as a child and married the daughter of a Jewish trader and a Colored woman, believed to be Dutch-Hottentot. This wife, now old, looks Jewish but has crimping, white hair and native gait. The couple had three sons and one daughter. Two sons are mainly Jewish in appearance but have negroid lips. The daughter, recently married to a Dutch man, is of good physique, looks Syrian and is excitable. The youngest son is decidedly native in appearance and has married a Basuto girl recently, for which he is despised by his relatives, family pride and social ambition being noticeable. In the family the Belgian and Polish influences seem quite masked by Semitic

descendants are known. This son married a Colored wife and had a family of three. The first was a daughter described as "white"; the second, a son, had European features and light skin but pouting lips and colored whites to his eyes and was very boastful; the third, a son, described as Cape-Dutch, married a woman who in herself united families *B* and *C*. Their family of six will be described later.

Family *B* originated by the marriage of a Norwegian man and a Hottentot woman. They had one son, who married a Colored woman of family *C*.

Family *C* had a male ancestor who was either German or Dutch. He married a Kimberley woman described as "white with a dash of color," having a white skin and black hair but a flat nose. Of their family, one daughter married the F1 son of family *B*, and they had a daughter who married the younger son of the F2 generation of family *A*, their progeny forming the F3 generation.

The father of the third filial generation is of Dutch-Malay-Colored blood. His wife combines Norwegian, Hottentot, German or Dutch and some form of slightly Colored ancestry. They had six children. The eldest is a daughter, who passes as white, is married to a Dutch man and has two young children. The second is a son, who looks white but calls himself Colored, has certain native mannerisms and is betrothed to a Cape Colored girl. The third, a daughter, resembles her elder brother but has crimping hair and tries to pass for white; she has married a Cape Colored man. The fourth and fifth, sons, died before they were four years old. The sixth, a son, is much darker than his brother, has pouting lips and coffee-colored whites to his eyes. He calls himself a Cape boy.

Most members of this family seem pleasant, respectable, fairly well-to-do people. There has been considerable race admixture in them and in the third filial generation some of the members pass for whites. They are sharply divided among themselves on the question of color.

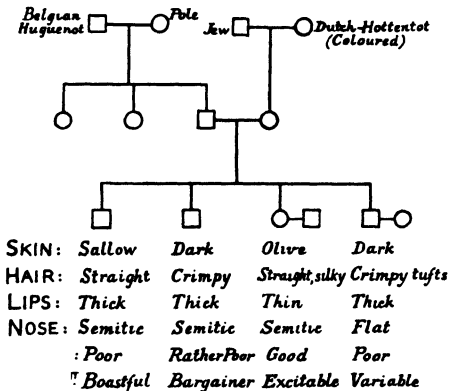


FIG. 4

and Hottentot admixtures, and after the introduction of the native element, the male progeny were of poor physique.

FAMILY 11. *Dutch-Norwegian-German (or Dutch)-Malay-Hottentot-Colored admixture.* Three families, designated *A*, *B*, *C*, each of mixed origin, have intermarried. As details regarding some of the "in-laws" are lacking, they cannot be satisfactorily charted.

Family *A* was founded by a Dutch man who married a Malay (Batavian) woman, who perhaps had some white blood. Of their family, one son and his

By intermarriage between two families, each of mixed origin, one Bantu, one Asiatic and three European strains are being combined. The first family originated by a marriage between a Portuguese sailor and a Dutch woman from Java. One of their sons married a Basuto. They had three in family, one

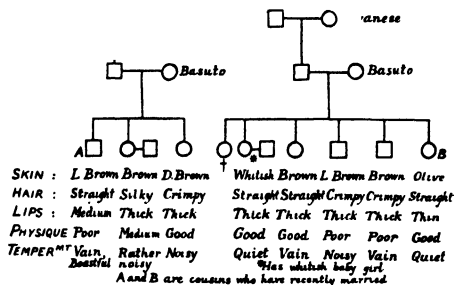


FIG. 5

In the F2 generation of the Portuguese-Dutch-Basuto family, the man shows the poor physique often associated with the European-Native cross and is extremely boastful. His two sisters are more native than European in appearance and temperament. In the Huguenot-Java-Basuto family, the men also are of poor physique and are unreliable and vain. The women, who are relatively light-skinned, and mainly of European facies, consider themselves white. Their physique is superior to that of their brothers.

In South Africa, race problems are bound up, not only with the natives, but also with certain Asiatic elements in the population. As already noted, the Dutch East India Company used the Cape as a provisioning depôt and some of their European staff settled there. With them they brought their Malay servants, some of them Javanese, and the descendants of these people, together with others from the Philippines, constitute the Cape Malay people. They form a small, separate group, living especially on the coast of the Cape Province, where they are well-known as expert fishermen, and where some have become plasterers and masons.

Now, much of the agriculture, including the cultivation of sugar, fruit and ginger, is worked by Indians, born in South Africa. They are thrifty people, now about as numerous as the whites in Natal, and some employ natives to work for them. Indians also work as waiters, fruit and vegetable sellers, grooms, basket makers, jewellers and shop keepers and have spread throughout the Cape, Natal and the Transvaal. A few wealthy Indian silk merchants also live in the country. The Indians form many small settlements and, until relatively recently, remained small self-contained communities, but now some admixture with natives and Colored, as well as with other Asiatics, is occurring. Unions between Indians and natives appear to have been due originally to insufficient numbers of Indian women in the country.

Chinese indentured labor for the gold mines was introduced in 1904 but the experiment of Chinese labor only lasted till 1907 and was a failure. Pulmonary complaints broke out among them, quarrels and feuds occurred and the remainder were repatriated. Some Chinese are still present in South Africa, mainly engaged in vegetable growing and laundry work, with a few merchants and shopkeepers. They, too, used to keep to themselves, but now inter-marriage with native and Colored peoples is occurring to a slight extent.

Some of these newer Asiatic admixtures in

the population may be described. They can be placed roughly into two groups, one consisting of Indian and the other of Chinese admixtures.

FAMILY 13. Tamil-Zulu admixture (Fig. 6). The father of this family is a Tamil, whose parents came from Southern India to South Africa. He was born in Natal. He is a tall, thin man, with a brown skin, oval features and eyes, thin lips and nose and straight hair. He is voluble and excitable. His wife is a well-built Zulu, stout, with a black skin, round features and eyes, thick lips and broad, flat nose, and a very equable temperament. They have three sons and three daughters, whose characteristics are shown in Fig. 6. One son and two

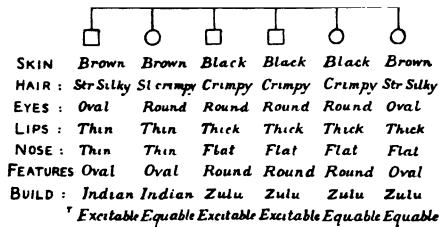


FIG. 6

daughters are brown-skinned like their father, two sons and one daughter are black-skinned like their mother. Four of the six children show Bantu build, hair, eyes, lips and nose, but the distribution of the characteristics among them individually varies. The children with native physical characteristics are rather more refined in appearance than their mother. All are better built than their father. In temperament the sons are excitable like their father and the daughters are equable, laughing girls, like their mother. The native characteristics seem dominant.

FAMILY 14. Madrassi-Zulu admixture. The father of this family is a Madrassi Indian, born in Natal. He is a spare man, with oval features, brown skin, straight hair, thin lips, thin aquiline nose and oval eyes. He is very excitable. His wife is a Zulu, a stout woman, with woolly hair, thick lips, flat nose and

round eyes. She is noisy but good-tempered. They have two sons and two daughters. The two sons are Indian in build, the two girls native. The elder son has straight hair, thin lips and nose, while the two girls and the younger son are natives in regard to their hair, lips and nose. Two sons and one daughter have oval features like their father and one daughter has a round face like her mother. One son is excitable like the father, the other three are noisy but good-tempered like their mother. None of these children is married. In this family the native characteristics seem dominant over the Asiatic ones.

FAMILY 15. Rajput-Shangaan cross with later Dutch-Thonga admixture. The founder of this family, of which two filial generations are known, is a Rajput Indian storekeeper, whose parents came from Bombay. He was born and lives in the Northern Transvaal, where he married a Shangaan woman. He is of the somewhat stocky, corpulent Indian type, with straight hair and oval eyes. His wife is a well-built Shangaan, with round features, thick lips, flat nose and round eyes. They have a family of four, consisting of two sons and two daughters. All four have married and have children. The eldest F1 is a woman, largely of Indian type but with slightly crimp hair and a rather flat nose. She is married to a Natal Indian and they have two sons, who were 7 and 5 years old when seen and were little Indians in physical features, apart from having rather crimp hair and slightly thickened lips. The second F1 member, a daughter, is typically native in appearance. She has married a Shangaan and their son and daughter, aged 6 and 4 when seen, look natives. The third F1, a son, is of medium build, has a dark brown skin, rather crimp hair, somewhat thick lips and round eyes but a thin nose, thus combining Indian and Shangaan characteristics. He is married to a Transvaal Indian woman and their baby girl, only about 4 months old when seen, appears to be of the Indian

type. The fourth F1, a man, is native in appearance but with rather more refined features. He has married a Colored woman of Dutch-Thonga origin, thus introducing some European blood. They have a son aged 2 and an infant daughter one month old, who seemed to be of the native type when seen but perhaps with more refined features, though it is difficult to judge at these ages. In this Rajput-Shangaan family Bantu hair and build seem dominant to Indian. The intermarriage of Rajput-Shangaan and Dutch-Thonga has already added yet another racial admixture to the population.

FAMILY 16. *Bengali-Dutch-Hottentot admixture.* The father of this family is a South African-born Bengali, living near Johannesburg. He is spare built, with brown skin, straight hair, oval eyes, thin nose and lips. He is voluble, excitable and somewhat quarrelsome in temperament. He is a hotel waiter. His wife, a Cape Colored woman, is the daughter of a Dutch father and Hottentot mother. She is a stout woman, with round eyes, flat nose and crimped hair and shows slight steatopygia. She is good-tempered. They have three sons and two daughters, all unmarried. The eldest son is Indian in build and temperament. The second son is largely Indian in appearance but has slightly crimped hair and flattened nose. The third son and the two daughters are largely native in appearance; all have high cheekbones and narrow oval eyes, and the two girls are also yellowish-brown in color, one also showing steatopygia, these characteristics being inherited from their heterozygous, partly Hottentot mother. In this family European, Asian and African stocks are combined.

FAMILY 17. *Tamil-Basuto admixture.* A Tamil man, born in Natal, married a Basuto girl. He is slight in build, with light brown skin, straight, sleek hair, aquiline thin nose and thin lips. She is well-built, with a brown skin but darker than her husband, woolly hair, thick lips and a flat, broad nose. They have a

baby son, 3 months old when seen. The infant has woolly hair, flat nose and thick lips, as far as can be judged at this age.

It may be mentioned that young men and women showing admixtures of Indian and native characteristics can be seen in Durban and in the townships along the coast of Natal. In general, the native characteristics seem more evident than the Indian ones, but the hair is straighter and the body build more refined than that of the usual native type.

Very small numbers of Chinese unions with natives and with Colored people are now adding new elements to the South African population, especially in the coastal ports of the Eastern Cape Province.

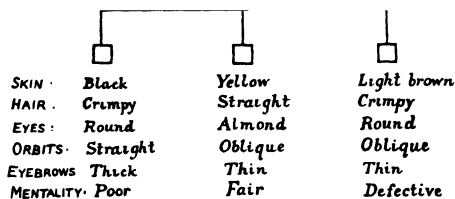


FIG. 7

FAMILY 18. *Chinese-Xosa admixture* (Fig. 7). A Chinaman, born in Amoy but long resident in South Africa, married a Xosa woman, who has become dull and stupid. They have three children whose characteristics are shown in Fig. 7. The eldest son looks like a native, the second like a Chinese and the third combines native and Chinese characters. He, unfortunately, is mentally defective. Unions between Chinese and full-blooded natives are unusual; most Chinese intermarriages have been with Colored people.

FAMILY 19. *Chinese-Dutch-Fingo admixture.* A Chinese man, whose parents were born in Canton but who came to South Africa where he was born, married twice. His first wife was Chinese, his second wife a Colored woman of Dutch-Fingo extraction. He is a typical

Chinese laundryman and she is a well-developed Colored woman with dark skin, slightly crimped hair and thick lips. They have three young children. The eldest, a boy of 8, is Chinese in appearance except that he has thick lips. The second, a boy aged 5, is typically native in appearance and in temperament. The third, an infant daughter, only 4 months old when seen, is Chinese in appearance. The hybrid children are of good physique and are healthy. Chinese characteristics are dominant.

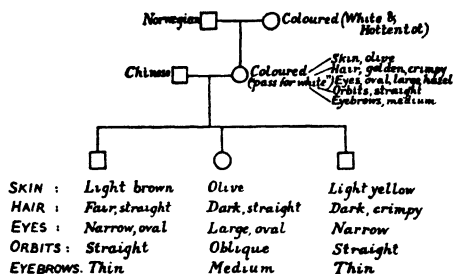


FIG. 8

FAMILY 20. Chinese-Norwegian-Hottentot admixture (Fig. 8). A Chinese from Singapore married a Colored woman, the daughter of a Norwegian father and a mother of mixed white and Hottentot blood. The wife looks European, with almost golden but crimped hair. They have two sons and a daughter, all unmarried, whose characteristics are indicated in Fig. 8. The two sons have the general appearance of Chinese, though one has fair, straight hair, derived from the Norwegian side and the other dark, crimped hair from the Hottentot side. The daughter has almost a Syrian appearance, but inherits the oblique orbits of her Chinese father. The family are healthy, clean and prosperous and the Chinaman is given a good character by his wife.

FAMILY 21. Chinese-Dutch-Native admixture. A Chinese man, born in Amoy but long resident in South Africa, married a Colored woman as his third wife, her two predecessors being Chinese. The Colored wife is not certain of her exact ancestry but knows that she is of mixed Dutch and native blood. She is well-

built and has brownish skin, crimped hair, prominent teeth and thick lips. They have a family of five, all unmarried, who show marked hybrid variation. The eldest son is Chinese in facies but has a very dark, native skin. The second, a daughter, is heavy and stout, has a yellow skin, scanty eyebrows, straight orbits, round eyes and crimped hair. The third, a daughter, has brownish skin, straight hair, thick eyebrows, oblique orbits, narrow eyes and prominent teeth. The fourth, a son, is Chinese in appearance and the fifth, a boy of 7, is like his mother but has a yellowish-white skin. In this family, the Chinese skin color and form of eyes are dominant, while the character of the hair shows segregation into native and Chinese types.

FAMILY 22. Chinese-Cape Colored admixture. A Chinese man, born in Kowloon, went to South Africa as a young man and married a Colored woman of uncertain ancestry. They have four sons and one daughter, all grown up. The eldest son, who looks Chinese and is quiet, has married a Cape Colored woman and has two sons who resemble him. The second F1 son has skin color like his father and is of serious temperament, otherwise he is native in appearance. The third F1 son looks and behaves like a native, has married a Zulu woman and has two sons and one daughter of native appearance and one daughter who looks Chinese. The fourth F1 son looks Cape Colored but has oblique eyes. He is married to a woman born in the East Indies and said to be "part Chinese." The fifth F1, a daughter, apart from having straight hair, is native in appearance. She is married to a Chinese man and has two little boys of Chinese appearance.

This family shows many variations in physical features but, on the whole, the Oriental is dominant and two members of the F1 generation have married other Orientals.

FAMILY 23. Tamil-Chinese admixture. An interesting type of race admixture is afforded by a marriage between a

Tamil man, who was taken from India to South Africa as a child, and a Chinese woman who was born in South Africa. They had six children. The eldest, a son, died immediately after birth. The second, a son, has a typical Indian appearance and has a violent temper. The third, a daughter, is Indian in appearance and placid in temperament. The fourth, a son, is now dead but is stated to have been like his Indian father. The fifth, a daughter, looks Chinese, having a yellowish skin and oblique orbits, but she has a violent temper. The sixth child, a boy, also looks Chinese and has a placid temperament.

In this family, where the Chinese element is derived from the maternal side, the Chinese characteristics do not seem quite so evident in the offspring, especially when compared with children of male Chinese and female African and Eurafrian, but in this instance both parents are Asiatics.

EURASIAN ADMIXTURES

Eurasian admixtures are uncommon in South Africa, only rare cases having been observed. Two may be described.

FAMILY 24. *German-Tamil admixture.* A German merchant married a very pretty Tamil woman. After a stay in East Africa, they went to Natal and settled there. Their family consists of five members, three of whom and their families are known. Two of the sons have married Natal Tamil women; one daughter has married a German man. The two sons, each of whom has a Tamil wife, have each two children, Tamil in appearance. The German-Tamil daughter, married to a German, has three children, the elder son being decidedly German in appearance and behavior, while the second son and the daughter are nearer the Tamil side of the family in appearance and temperament. Social and religious factors have come into play in these related families. The families of like racial constitution (German-Tamil-Tamil) are happier than the one in which there is a greater propor-

tion of European blood (German-Tamil-German). The German husband of the German-Tamil wife is a Lutheran, she is a Buddhist and their children so far have been educated as Lutherans. The German-Tamils married to Tamils seem to be happier, for with them there is less upset of social ideas and they are co-religionists.

FAMILY 25. *Scotch-Rajput admixture.* The father of this family is a fair Scot, who married a high-caste Rajput woman in her own land. Twin boys were born to them there and, after they settled in South Africa, a baby girl was born. The boys are like their mother in features and hair but are slightly fairer-skinned than she is. The baby girl had quite a fair skin when seen.

SOME REMARKS ON RACIAL ADMIXTURE AND ITS EFFECTS IN SOUTH AFRICA

The white population in South Africa is greatly outnumbered by the non-white, as already stated, and many problems naturally arise therefrom, as well as from the impingement of the one on the other. At the present time, the whites constitute what has been termed an "aristocracy of labor." They are the originators of great schemes and the ones who carry them through. They are manufacturers, merchants, farm proprietors, bankers, legal, religious, educational and clerical workers and skilled craftsmen. The natives are the manual workers. The Colored people or Eurafrians are in an intermediate position. The Colored men are good market gardeners and some show considerable skill as painters and decorators, chauffeurs, waiters and the like. Some of the Colored women have taken up work as waitresses, domestic helps and laundresses and do well thereat.

In South Africa, among the white population, a class has developed known as the "poor whites," estimated to form as much as 8 per cent. of the white population and to number up to 150,000 people. Many circumstances have contributed to the making of the "poor white" class, among which are the effect of Roman-Dutch law on land subdivision, the isolation of small settlements particularly in the past, intermarriage with near relatives or with natives or Colored people, successions of droughts and bad seasons, increase in feeble-mindedness (perhaps the result of inbreeding and isolation) and, a potent cause, laziness due to dependence on the native to do all the hard work. The vast majority of the "poor whites" are of Dutch stock.

These "poor whites" constitute a very serious problem. Mentally they are unfit for skilled

work. Physically they are often fit for unskilled manual work, but they feel that, being white, they are part of the "aristocracy of labor" and despise and refuse to do "kafir's work." The Government gives them relief and has made many strong efforts to rehabilitate them by labor colonies where they are trained and by land settlements in good irrigated areas. Unfortunately, they are very prolific and their numbers still increase.

With advance in education of the Colored people and of the natives, the less well-equipped of the whites and especially of the "poor whites" find themselves in occupational difficulties. There are too many applicants for skilled work and the lower strata of white society, above the "poor whites," are finding themselves in competition not only with the Colored people and Indians but also with the more intelligent and better educated natives. On the other hand, due to bad seasons and lack of employment (resulting in natives being displaced by Coloreds or whites), there is the danger of the creation of a "poor black" class, especially among detribalized natives.

From studies of large numbers of Eurafrikan crosses in South Africa, of which some types have been described, such crosses are not to be commended. Racial admixture, even between whites, tends to break the continuity of thought and custom, especially when the crossings are between peoples not closely related by common origin, language, religion or habits. The contrast, naturally, is more marked in crosses between whites and natives, who have very different outlooks on life. There is, in such native crosses, and also in the more recent crosses between whites and Eurafrikan, an alteration of social customs and loss of social inheritance by the offspring. On the whole, the Colored race has neither the stamina, the energy nor the persistence of the white; these hybrids are less stable in temperament and they are not controlled by the tribal conventions of the natives. Among them dislike of the native connection seems general. They wish to be considered white. Numerous social grades exist among the Eurafrikan people, chiefly based on the amount of white blood they possess, those with more white blood despising those with less. Even in one family, "whiter" children despise and dislike their darker brethren.

In the lives of "mixed" families, there appear to be great inequalities. The white parent tends to sink, to become less energetic and more animal-like and careless and the black parent loses respect, no longer regards tribal authority and, on the whole, is not elevated. While recent legislation has forbidden unions between whites and natives, there is no ban on marriages between whites and Colored peoples. Many Colored women desire to be "white" and employ cosmetic preparations to lighten their skins and remove the crimp from their hair. They desire to marry white men—and sometimes there are disastrous consequences when very dark babies are born to some of these masked white women. Fortunately, some of the Colored people themselves are realizing the handicap of their origin and are intermarrying among themselves, a procedure that appears to bring about the best social results.

Another fact that has been often noted is the poor physique and bad health, especially in the first cross, of the offspring of many unlike racial admixtures, such as black and white. Susceptibility to pulmonary complaints seems intensified. Bad teeth are common, even in quite young people. Physical disharmonies occur, such as large native teeth in small European types of mouth, circulatory systems lacking sufficiently large blood vessels and small internal organs in tall Eurafrikan men (seen post mortem). Such disabilities lead to relatively short life. Mental disharmony often accompanies the physical and is shown in violent outbursts of temper, vanity and sexual instability. For both social and physical reasons white and black seem best apart and racial purity should be maintained. It is to be regretted that such segregation was not realized in the past, as now it is often impracticable.

So far as Afro-Asian admixtures are concerned, difficulties may arise and have arisen where native women have favored Indian men rather than their

own race. The Indian women of the community and of the families resent the introduction of native women, while, on the other hand, native men object to their women's departure from tribal tradition and control. The hybrid Indian-native women seem more refined than the native and have better physique than the Indian, as far as present observations go.

The infusion of Chinese blood in certain places among native and Colored peoples, though relatively small, appears to be greater than was at first suspected. In many cases the Chinese facies seems to have impressed itself on many of the offspring. The mental characteristics of the hybrids vary, but the Chinese temperament appears to predominate. The hybrid children show more initiative than the native children among whom they live.

Health problems arise in connection with race admixture in South Africa. Importation of laborers from India and more recently from Portuguese East Africa has brought hookworm disease, and industrialisation of natives and Colored people has led to outbreaks of maladies such as tuberculosis, silicosis, pneumonia and measles among them. The native peoples, in turn, have acted as reservoirs of malaria and bilharziasis. How the newer racial strains in the population will react to health matters remains to be seen.

In general, while intermarriage between black and white is not desirable biologically or socially, that does not condemn race admixture as a whole, for admixture of peoples at similar levels of civilization may result in the perpetuation of highly desirable qualities. Mutual respect between races does not necessarily imply social equality. This consideration should be sufficient to prevent such intermarriages as would result in upset of good traditions and disturb physical, mental and social harmony.

R. Broom (*Natural History*, 1923); H. B. Fantham (*South African Journal of Science*,

1924-27, 1930, 1935); J. Hewitt (*ibid.*, 1921); L. F. Maingard (*ibid.*, 1931); W. H. Tooke (*Records Albany Museum*, II, 1913).

H. B. F.

REJUVENATION. Old age implies a deplorable condition, and senility is both humiliating and degrading. Nevertheless, if we continue to exist and if we proceed normally and slowly toward the natural end of life which, in my opinion, should not be reached before the age of one hundred to one hundred and twenty years, it is necessary to traverse periods which are not agreeable. The point greatly to be desired is that such periods should be postponed and abridged as much as possible and we are all aware that some fortunate individuals almost complete a century of life, or even exceed it. They accomplish this prolonged existence without any artificial aid, for which they have no need, and merely through the fine glandular inheritance received from their ancestors. Aged people of this type, in fact, remain magnificent specimens of humanity, as justly remarked by Charcot. They amaze everyone by their physical force and their mental clarity, and feminine charms have always an attraction for them.

In contrast with such fortunate persons, however, we must not forget those whose heritage is poorer, and whose parents, possessing only very ordinary or inferior endocrine glands, have transmitted the like to their offspring. The latter have no power to maintain amorous and sexual relations between the ages of fifty to seventy years. As an inevitable consequence, they lose at the same time both bodily vigor and mental energy. They constitute the *prematurely aged* and have need of artificial assistance. They have exhausted the vital capital which was bequeathed to them and they must receive renewed resources for continuing the necessary expenditures of life.

The idea of supplying such deficiencies with fresh energy is not wholly a recent one, yet certain aspects could arise only during a century characterized by audacious innovations, that is to

say in this twentieth century, in which humanity has progressed farther in thirty years, and has produced more marvelous inventions than has been the case during the thousands of years which have preceded our modern period.

While aims were less sweeping in the past, it was none the less true that attempts were made for aiding those who were disinherited by nature and yet who desired still to live and to love. That remarkable people, the Chinese, were first to have the intelligence to see the problem clearly. Aply creative in the arts and sciences, they originated ideas concerning medicine which we are entertaining some thousands of years later. Since their physicians observed that the general weakness appearing with advancing age is accompanied by impairment of capacity for amorous existence, they perceived that entire bodily energy can be increased only by first enhancing the functional vigor of the genital glands. Directing their studies in this path, these physicians observed that the horns of deer become soft and pink during the rutting period. This change, corresponding with increased activity of the sexual function, enabled them to think, quite correctly, that an increased production and excess of the internal secretion of the genital glands was distributed throughout the organism, that it reached the horns and that it there produced the changes in appearance and color which were commonly observed.

These Chinese physicians thus understood that the genital glands produce not only the elements required for fecundation and reproduction, but also a secretion, or liquid, absorbed by the blood of the male and capable of modifying various conditions in the male organism. Noting likewise that animals in general become more aggressive, more turbulent and more attractive during the rutting epoch, they inferred that the soft and pink horns of the deer were saturated with this energy-endowing substance and therefore prescribed powdered deer horns for men who were

lamentably lacking in the vigor manifested by the animals in question. This traditional remedy is still in use in China.

Chinese physicians are so firmly convinced that the source of energy resides essentially in the genital glands that they employ, for the same purpose, preparations made from the product of these glands furnished by young men who sell to the native pharmacists, for a fair price, and for the use of men of advanced age, the elements of energy abundantly present in the young and vigorous. With their usual perspicacity, the Chinese perceive that the reproductive elements mingle with and bear with them, as they leave the genital glands, a certain quantity of the internal secretion which is useful for application to enfeebled organisms.

Whether other peoples have made similar observations and have resorted to similar practices, I am not aware. However, in all rural regions the changes occurring in domestic animals during the rutting period may be easily noted. With rams, for example, rutting is accompanied by changes disagreeably evident to our olfactory sense. Again, the rude common-sense of the ordinary French people has established a relation between physical and mental qualities and the condition of the genital glands. A man who is weak, and without energy or courage, is characterized as a man having no sexual glands. Physicians, however, must not depend solely upon common-sense. They must be taught what they should know by the properly constituted instructors of the medical schools. Not until the nineteenth century did Claude Bernard and Brown-Séquard, professors of the Collège de France, where my own studies have been made, teach the medical world of the existence of the glands of internal secretion, whose function was wholly unknown until that time. This ignorance of the most essential mechanisms of the human body naturally precluded any possibility of understanding the primary reason of human decline, of pro-

gressive enfeeblement and of the final arrest of life.

In my book, "The Conquest of Life," I have shown the structural modifications appearing as age advances. These changes include atrophy of the so-called epithelial cells. These cells are differentiated and specialized for the accomplishment of the definite functions of every organ and, in old age, they disappear and are replaced by the simpler, or connective-tissue, cells and become fibrous after a certain time. The unspecialized, replacing cells cannot do the work of the original epithelial cells. As a result, all vital functions become disorganized, weakness increases and death finally ensues. We now know the real reason for these changes, consisting of a progressive diminution, as age progresses, of the activity of the genital glands. The consequences consist of complex modifications occurring throughout the entire organism resulting in the disorganization of other glands and of the entire cellular life of the body. However complex the changes in the organs and tissues, the real and initial reason consists of a lack of an agent capable of stimulating the vital energy, a deficiency dependent upon exhaustion of the sources of youthfulness.

Brown-Séquard was the first to seek a remedy for this condition, just as he was the first to understand the vital rôle of these glands and to determine their importance in the complexity of the changes occurring in the structures of aging organisms. He was also the first to administer to himself, at the age of seventy-two, and to other aged men injections of an extract obtained from triturations of the genital glands obtained from certain animals. Since he employed extracts which were fresh and just produced in his laboratory, his results were excellent. However, the preservation of these extracts is very difficult, they soon become altered and this method of preparation, originally a laboratory one, has become of much less value as employed by ordinary pharmacists.

Steinach, of Vienna, has originated a method which is quite different from that just outlined. This eminent physiologist has demonstrated with rats, as I have done with rams and goats, that the grafting of young genital glands regenerates aged animals from every viewpoint. However, Steinach has not gone farther than the physiological demonstration of the effects of the genital glands, making no deduction applicable to man. He has doubtless made no statements in this respect on account of many difficulties associated with the question, young men not serving the purpose as readily as rats may do in experiments. My idea of using monkeys did not occur to him, though it has rendered my method very successful, especially through a special technique assuring survival of grafted glandular tissue for several years.

However, Steinach has not neglected the idea of employing the genital glands for rejuvenation, recommending a procedure which is ingenious, though somewhat peculiar. Probably considering that products of the genital glands discharged externally impart no benefit to the individual and are intended only for reproduction, he remembered that aged people may readily dispense with the latter function, amply fulfilled during youth and the adult period. Arrest of the external secretion and its functions should then be feasible, since it involves loss of vital elements with which certainly mingles a large part of the vitalizing internal secretion. Steinach therefore recommends ligation and section of the ducts through which these external elements pass on their way to fertilize the ovum. Steinach has possibly considered that the aged may dispense with sexual pleasure, that their partners may also make this sacrifice and that what is lost in gratification may be gained in health. With Steinach's method the aged glands are forced to extra effort, whose effects should be the more marked in proportion as the individual concerned is not exhausted, not sclerotic and farther re-

moved from the inevitable final cessation of his functions.

The method of Steinach had an extensive vogue for several years. I cannot say whether the enthusiasm it created was merited or not, but I am inclined to believe that it has come unjustly into disuse, even in the country where it originated.

Probably in order to obviate certain disadvantages of the Steinach operation, which deprives the affected individual of his pleasurable sensation, Karl Doppler, also of Vienna, has devised a procedure which, without ligation of the excretory ducts, permits stimulation of the organism, although the aged glands are likewise obliged to make an added effort. The aged glands might perhaps become exhausted more rapidly, but during the period of renewed vitality, at least, the aged individual would lose none of the advantages which the sexual glands are designed to supply. With this object in view, therefore, the vitality of the glands is increased by nourishing them more effectively instead of ligating their ducts. The purpose is accomplished by swabbing the nutritive blood-vessels with a solution of phenol, which paralyzes the nerves which surround and contract the vessels. The action of the constricting nerves being thus abolished, the vessels remain dilated and may supply the glands with a larger quantity of blood and therefore impart greater vitality to them. As long as the nerves remain paralyzed and the vessels are dilated, the aged glands, like well-fed old horses, accelerate the advance of the aged individual's life.

It is a source of satisfaction that these methods of revitalizing exist as well as my own procedure. However, none of them can replace my method, which consists of implanting upon an enfeebled, old and exhausted gland tissue which is young, vigorous and capable of functioning as ably as did the individual's own gland when he himself was young. These methods are nevertheless valuable, for the young

glands supplying our "spare parts" are obtained from monkeys, which are unfortunately much scarcer than men. Were all the aged persons in the world to demand the marvellous piece of new tissue, the result would be a catastrophe. The number of monkeys now available could by no means satisfy any such demand and future generations would be wholly deprived of the benefits in question, all the suitable monkeys having been sacrificed for the needs of the present period.

It is thus much better to reserve the monkeys for a limited number of aged individuals who may be rejuvenated completely and durably. Those who cannot profit by the grafting method and the new source of vitality which it provides may resort to procedures which supply somewhat more vitality from their own glands, or may employ opotherapeutic substances derived from genital glands.

It now remains only to describe my own method, employed for the past fifteen years by myself and my pupils, who now exist in nearly every country in the world. I shall first mention the essential points in my technique.

Technique of the Voronoff Grafting Method.

The graft should be placed in the scrotum, and *never elsewhere*. Only within the scrotum do the testicles encounter the physiological conditions which favor their vitality and the temperature of three to four degrees lower than the temperature within the abdomen, a condition necessary for their development, as proved by the studies made by Crew, Moore and Quick.

The sheath, or tunica vaginalis, is richer in blood-vessels than is the albuginea. Grafts are therefore placed on the parietal or visceral aspect of the tunic. The region of implantation should be carefully scarified with the point of the knife—the principal stage of our technique—in order to induce a new formation of vessels, which should penetrate the grafts to insure their proper nutrition by the blood. The thickness of the grafts should not ex-

ceed half a centimeter, in order to permit the new vessels, whose calibre is always minute, to traverse the entire glandular substance.

Practice has shown that the number of the grafts should be limited to two for each tunica vaginalis. We must add that the grafts should be taken as they are needed and at the last practicable moment, in order that the circulation may be maintained in the fragment of tissue to be removed, until the final moment of transferring it to the vaginal tunic of the receiver. Preservation of the testicle in cold storage or the incubator keeps the anatomical structure of the gland intact, but not its power of continuing its vital cycle in the body to which it is transplanted. Certain biological conditions are also essential to our method.

For grafting animals, we obtain the necessary material from young adults of the same animal species. For grafts applicable to men, we use anthropoid and cynocephalous apes which closely resemble man, anatomically, physiologically and humorally. In both cases the grafting-tissue must be obtained only from donors whose blood is of the same type as the blood of the receivers.

While distinct blood-groups have not yet been determined in such mammals as sheep, cattle, horses and other species, different individuals have been found to present blood differences which are sometimes very considerable. Before grafting, therefore, it is absolutely necessary to prove blood similarity between donor and receiver, by very simple methods which are now available. For men and monkeys, this test is facilitated by the fact that chimpanzees, like all other anthropoid apes, present four general blood groups. After determining the blood group of the man, a suitable chimpanzee may be readily selected to supply the graft. If cynocephalous apes must be employed (including papions, hamadryas, baboons, etc.), it must be remembered that, contrary to anthropoid apes, they possess only blood groups II and IV. Since

Group IV is of the "universal" type, it may be employed in all cases, while animals of Group II may serve only for men whose blood is also of Group II.

For human individuals of blood groups I and III, cynocephalous apes of Group IV may be employed, or chimpanzees of blood groups I, III or IV. Rapid resorption of grafts is due nearly always to neglect of these important biological conditions, or to imperfect technique. Every detail is very important for insuring prolonged survival of the grafts. For example, if the surface of the vaginal tunic is not scarified, or if the fragments of tissue for grafting are too thick, the newly formed blood vessels cannot properly irrigate and nourish the grafts and the latter will be rapidly absorbed or necrosed. Again, if the grafts implanted in the human body be taken from a monkey whose blood-group differs from that of the receiver, the grafts disappear in a few weeks.

The age of the monkey selected must also be considered. Animals which are too young, which have not yet reached puberty and which have no rich production of the necessary hormonal secretion are unsuitable for grafting purposes. Those which are too old, and whose source of the necessary secretion is inactive or diminished, should also be discarded. Since the exact age of these large monkeys cannot be determined, prolonged experience has taught us certain points which may show whether monkeys are young or old. The canine teeth should be much longer than the incisors and should be of a light yellow color. If the canines have the same level as the incisors, the age of puberty has not yet been reached. If the teeth are dark, approaching black, the monkey is too old.

The survival of a graft borrowed from a foreign gland and detached from its vascular connections and its physiological environment demands the observance of all the conditions which we have mentioned. At this price, *and only at this price*, is survival of the

transplanted tissue sufficiently prolonged, extending to six or seven years in favorable cases, as proved by histological examination of the grafts, made by Professor Retterer in his laboratory at the Paris School of Medicine.

Histological study of these grafts yields the best demonstration that grafting by our method is practicable, that it is a reality and that to its technique must not be attributed the rapid resorption of grafts pointed out by others and which we have ourselves observed whenever, for any chance reason, we have been unable to fulfil all the favorable conditions which we have described. Before presenting our histological demonstration, however, we may describe the physiological phenomena observed after applying testicular grafts, usually associated with grafting from the anterior lobe of the hypophysis and from the thyroid.

Physiological Phenomena Observed After Grafting.

For one, two or even three months following the grafting operation, the grafted individuals fail to note any evident benefit due to the graft. Not until later appears a distinct improvement in the psychic functions (clearly noted in physicians and intellectual persons in general). The changes include improvement of the memory, resistance to fatigue and better aptitude for mental work. The patients observe a general feeling of well-being, which may accompany return of the genetic functions. Such are the first manifestations. More concrete effects then develop.

The physiognomy undergoes a change. The glance becomes keener and the skin firmer, more elastic and more colored. A remarkable result, reported by many operators, is seen in a renewed growth of the pilar system, especially in regions related to virility. Hair of the beard, chest, linea alba of the abdomen and the pubic region assumes abundant and brilliant growth, the color of the new hair sometimes being that originally present. This fact is

due to the graft, and solely to the graft, for the hair of other regions (that of the eyelids, eyebrows and scalp), more directly dependent upon the thyroid secretion, is not at all affected.

The bearing and aspect are younger, suppler and surer. The bent and feeble body becomes erect, tonus and muscular power increase (shown either subjectively, or objectively, by means of the dynamometer) and subcutaneous fat becomes largely resorbed. The digestive functions improve. The appetite increases and gastric dilatation, so frequently present, diminishes or wholly disappears, as do flatulence and atonic constipation, owing to increased tonicities of the smooth muscle.

The most remarkable effect produced in the circulatory system consists of a decline in blood pressure constantly produced in cases of hypertension. What is its explanation? Increased tonus in the smaller arterial vessels which regulate blood pressure? Or an inhibitive action of the new testicular hormone upon the increased adrenal secretion present in old age?

Next occurs a favorable change in urinary evacuation, which is so often disturbed in aged persons by atony of the bladder or congestive hypertrophy of the prostate gland. Dysuria and pollakiuria consequently diminish or disappear. These effects may be partly assigned to increased tonus in the muscular fibres of the bladder, partly to vicarious diminution in prostatic congestion.

Improvement in the special senses sometimes occurs, vision being particularly improved in cases of presbyopia. This favorable effect is probably due to increased tonus in the ciliary muscles.

Finally, biological and functional tests show other favorable changes in the general metabolism. Cholesterol and urea diminish, glycemia and glycosuria decline in cases of hypertensive diabetes, and the basal metabolism increases.

In view of the general production of these effects, it may be reasonably af-

firmed that the favorable results appearing after the first few months may be more or less prolonged for a period of six to seven years. At the end of this time, the morphologic and dynamic benefits notably diminish, or even wholly disappear. Fresh grafting is then applicable. It is often requested, a fact constituting the best proof of the advantages derived from the first graft, and whose continuance is desired. However, the effects of the second graft are of briefer duration, which scarcely ever exceeds three to four years.

The Histological Evolution of Testicular Grafts.

Histological studies of testicular grafts have given rise to many controversies, resulting from the differing conditions under which different grafts have been implanted and also from wide differences in the technique. The studies of Retterer refer to grafts removed after being implanted by methods very closely similar to those of our own technique.

From the time of implantation to the first, second or third month a kind of readjustment occurs within the graft. Connective tissue reciprocally penetrates between the tissues of the graft and those of the host, the two becoming thus united. Blood vessels interpenetrate at the same time, as well shown by Alexandresco. During the earlier weeks, the seminiferous tubules undergo important transformation with respect to their form, size and structure. Some retain their rounded or oval form, well delimited by the basal membrane, while others lose the delimiting membrane, the transformed cellular elements lying free amid the connective tissue. Their structure undergoes a change at the same time. Sperm formation is generally arrested after the first week, the new generations reaching only the spermatocyte stage, rarely developing into spermatids. The epithelial cells tend to become morphologically uniform.

Toward the second month, spermatocytes are no longer formed and the

former tubules are filled only with prismatic cells of glandular aspect, recalling the Sertoli and Leydig cells. The interseminiparous connective tissue proliferates freely. During this phase of the histological transformation of the graft (including the formation of new blood-vessels, differentiation of the epithelial elements and reconstruction of the connective tissue), establishment of the hormonal function is just beginning and its effects upon the organism are very slight.

After the first two or three months, a sort of quantitative and qualitative equilibrium becomes established between the epithelial and the connective-tissue elements of the graft. The equilibrium appears to be maintained for a prolonged period. For some years, the epithelial elements continue to be represented by islands of large prismatic cells, of glandular appearance, by pseudo-follicular formations and by epithelial cells scattered sparsely throughout the connective tissue. The interepithelial tissue is represented throughout this stage by adult connective tissue containing many fibres and vessels, but relatively few fixed or migrant cellular elements.

Equilibrium thus appears to become established between *transformed but always present* epithelial tissue and fully formed connective tissue. The characters of the epithelial elements are distinctly glandular, presenting abundant cytoplasm filled with fat granules, lipoids and mitochondria. The constant presence of the epithelial elements is accompanied by constancy and maximum of the physiological effects shown by the renewal of vital energy mentioned above. However, equilibrium between the epithelial and the connective tissue is established at the expense of the former.

Being under abnormal conditions, the epithelial elements became gradually exhausted, degenerate and disappear after a period of five, six or seven years, being replaced by connective tissue. At a certain moment the

epithelial tissue is "below its effective minimum," both quantitatively and qualitatively, and the benefits of the graft no longer exist. Disappearance of the epithelial tissue of the graft and its fibrous transformation cause the physiological phenomena to disappear. Parallelism is very evident here. Scarcity or absence of the epithelial cells produces cessation of the physiological effects dependent upon these cells.

This progressive and finally complete transformation of the graft into fibrous tissue appears after a variable time. When the graft "fails to take," through faulty technique or humoral incompatibility, its partial or total necrobiosis occurs as early as the end of the first week. In such cases, the graft is eliminated, resorbed or transformed into fibrous tissue during the first few weeks following implantation. When the graft successfully "takes," however, the peripheral portion undergoes a very slow fibrous transformation, complete fibrosis not being produced until very late. We have observed that the graft may persist for more than six years without complete fibrous transformation, as is often shown by examining histological sections of the grafts. We have always found that prolonged beneficial effects of the grafting depend strictly upon persistence of the grafts.

Whenever a patient complains that the operation has had no beneficial effects, palpation of the scrotum shows resorption and consequent absence of the graft. On the contrary, when the subject shows renewal of physical, mental and sexual energy for periods of five, six or seven years, palpation of the scrotum always shows the presence of the graft. It cannot be granted that the grafts discharge for such long periods a hormone which is preformed and stored within them at the time of their transplantation. Such a result might possibly occur during a few weeks, but not for years.

The grafts thus continue to function for years, distributing, like normal glands, their hormone as fast as it is

formed by the persisting epithelial cells, though the latter are transformed. Such is the reason why the physiological effects, appearing as increased vital energy, are observed at the same time. The histological examinations made by Retterer and Alexandresco prove this point more effectually than any other demonstration.

The idea that the beneficial results unquestionably produced by grafting are due, not to the hormonal action of the grafts but to auto-suggestion, cannot be sustained. Neither auto-suggestion, faith nor imagination can replace a lacking or deficient gland, nor can they transform a feeble and aged man into a vigorous person capable of enjoying for years physical and mental faculties which have been previously diminished or abolished for long periods. Auto-suggestion cannot create phenomena which depend especially upon the internal secretion of the testicles, such as increase in the basal metabolism, diminution of blood pressure, relief of prostatitis, increase in muscular power, renewal of the memory and other mental faculties and renovation of sexual functions which were abolished or greatly enfeebled for a number of years. Furthermore, auto-suggestion could act in any event only during the first few months following grafting. That it could replace for years the absent hormonal secretion would be simply a miracle, and not auto-suggestion at all. The succession of phenomena which follow the grafting procedure shows clearly that auto-suggestion plays no part in their causation.

Since the graft can produce no effects during the first two or three months, constituting the phase of histological reorganization, no well-marked change occurs in the condition of the patient during this period and no effect is produced by auto-suggestion. On the contrary, if the patient is not warned, he sees no immediate improvement in his condition, complains and begins to despair of a result. His happiness is so much the greater when, after

three months of waiting, he becomes aware of possessing new energy, which is shown by various effects and which continues for six or seven years. Old animals grafted in our laboratory, in Algeria, in Brazil and in Argentina (by the Chief Veterinary, Professor Newton) have shown exactly the same phenomena and it would be absurd to consider auto-suggestion under such circumstances.

At the present time, several thousands of grafting operations have been performed with our technique, employed by ourselves and by a number of French and foreign operators. All of these cases have been thoroughly checked and followed up. After an experience of fifteen years with this method, we are entitled to affirm that testicular grafting, and especially judicious application of *polyglandular* grafting, when practised with due observance of properly defined biological conditions and according to the technique which we have perfected, confer an unmistakable renewal of vital energy and defer old age and its unavoidable infirmities for a very appreciable number of years.

S. V.

RELIGION, SEXUAL ASPECTS OF. The association between religion and sex presents two distinct aspects, the one cultural-historical, the other psychological. The functions of religious activities were originally associated directly with those of sex. In later forms of religious phenomena, which have tended to assume an ascetic character, there appears to be, on the contrary, an opposition between religion and sex; but, from the very character of religious emotion, the fact that it is interchangeable with forms of sexual emotion is abundantly manifested.

Culture-historical Association.

The scope and function of those beliefs and practices which are termed religious differ fundamentally in the lower phases of culture and in the more advanced. So important is the

difference that to ascribe to the former the connotations suggested by the term "religion" is profoundly misleading, despite the fact that the most advanced forms of theological religion have arisen by a continuous development from the more primitive, and retain much of their original characteristics. In the lower cultures the ideas which fall under the heading of religion had little reference to any interpretation of life or the universe, a feature which bulks so largely in conceptions of theological religions. The primitive forms of religion, which are on that account distinguished from the more advanced by the term "magic," were primarily and immediately concerned with the practical needs of existence. The means employed by human beings to obtain the satisfaction of their needs and natural desires fall under two heads, the rational, and the irrational. Rational means are those which rest upon the lessons of experience, and are, according to that teaching, calculated to bring about the fulfilment of the desired purpose. In lower cultural stages, the efforts of human beings to obtain that desired fulfilment are scarcely ever confined to rational means. These are almost invariably supplemented by irrational means, which are not suggested by experience, but arise out of an exteriorisation of the desire, transcending the use of rational means.

Those irrational means of action, which usually take the form of an imitative acting-out of the desire, constitute the magic procedures to which a greater importance is ascribed in primitive cultures than to the application of rational means. The satisfaction of economic needs depends directly, in lower cultures, whether hunting, pastoral, or agricultural, upon the fertility of food-animals and plants. The irrational means of promoting that fertility by imitative magic consist mainly in the representation or performance of the sexual act, in orgies of promiscuity in which customary sexual restraints are set aside. Totemic rites, intended to

promote the fertility of food animals, include, among the aborigines of Australia and America, sexual orgies and the exchange of wives. Sexual magical rites acquire an increased development in agricultural cultures. Ritual promiscuity plays a prominent part in the magic religious ceremonies of the agricultural cultures of Africa, Asia, Indonesia, and Central America. In the form of hierodular prostitution, obligatory prenuptial intercourse, sacred union (*hieros gamos*), it was equally prominent in the religions of the great agricultural civilisations of Western Asia. "All peoples, except the Greeks," Herodotus states, "have sexual connection with women in the temples." There is ample evidence that the exception did not hold in early Greek religion.

The imitative magical function of sexual intercourse in promoting fertility in general, and hence abundance and prosperity, has naturally been generalised as a means of propitiation, to promote good fortune and avert evil. Sexual rites are performed in lower cultures for the purposes of rain-making, of protection against disease, famine, earthquakes, and as an adjuvant to the success of magical operations. Those rites are thought of as favoring a benevolent attitude in the higher powers, thus serving much the same purpose as prayer in more advanced cultures. In India the explanation is offered that "the gods take pleasure in seeing women dance naked and act lasciviously," and the same interpretation is given by Roman writers. Moreover, the rationale of the sexual functions as means of reproduction being, even to this day, imperfectly understood, the sexual act is regarded as an irrational, magical act, bringing about effects by supernatural means. "Children come from God." The man is during the sexual act the representative and medium of the god. The act is surrounded, in primitive conceptions, with an aura of magic, mystic, religious significances. It is commonly accompanied or preceded, as among Mahometans, by a prayer or some other appeal

to divine powers. The elaborate rites and customs which accompany marriage, and which in their original intention have not reference to the consecration of the union, but to its fertility, are to a large extent survivals of the ritual and magical character attaching to the sexual act.

The older writers on the cultural history of religion, impressed with the practices of sexual licence and the pervading sexual symbolism of pagan religions, seemingly so incongruous with the Christian conception of religion, suggested by their accounts the existence of special sexual cults, or "phallic worship." A more accurate understanding of religious origins shows that all cults, being functionally related to the magic promotion of fertility, were primarily associated with sex. In Greek culture the predominance of civic over theocratic powers, and the consequent subordination of religion to civic and political functions, together with the growing interests of patriarchal rights of property, first led to the attenuation and obliteration of practices of ritual licence and of sexual symbolism in religion. Phallic symbols were covered with cloths in the processions of the *thesmophoria*; the lascivious formulas uttered by the women at night were forbidden; symbolic unions were substituted for ritual intercourse in the Dionysiac and Eleusinian mysteries; the ithyphallic images of gods, and in particular the Hermae, were attenuated or suppressed; the hetairae of Corinth lost to a large extent their sacred hierodular character.

The same attenuation took place in Rome, which identified its cults with those of Greece. Fescennine rites and the ritual licence of Mater Matuta and Vesta took place behind closed doors; the Saturnalia, the original ritual of seed-time promiscuity, was tempered into a Carnival festival, and the public celebration of Dionysiac rites was put down by law; the primitive ithyphallic Latin deities, which were originally drawn round the fields and crowned by

the matrons, survived only as priapic figures for the protection of gardens.

Religious revivals, however, took place, often spoken of as "Orphic," which harked back to earlier forms of religious ritual and emotion, and in which the sexual symbolism of the cults of the Great Mother, of Dionysus, and other archaic deities was revived. That trend assumed great development with the religious syncretism of Hellenistic and of imperial Roman times, under the growing influence of Western Asiatic and Egyptian religions. Those tendencies, with which blended the more mystic aspects of Greek and Hellenistic philosophical thought, the Hermetic, or Gnostic, theosophy of Egypt, and the Messianic and kabalistic systems of Jewish sects, played a predominant part in the growth and establishment of Christianity.

Notwithstanding the ascetic moral preoccupations of the Roman religion transmitted to medieval and modern Europe, much of the "phallic" character of the paganism on which it was engrafted survived in its symbolism, theology, and ritual. The archaic Egyptian symbol of Creative Divinity, for example, which represented the god as sucking his penis, in order to bring forth the creative Word, was attenuated in the form of the serpent biting its tail.

Several gnostic sects celebrated the eucharistic mystery by partaking of sperm spread on the consecrated bread. The eucharistic meal was originally celebrated in Christian Rome, as immemorably among the Hebrews, by partaking of fish, a substitute for the phallic serpent, the Messiah, or Christ, having been since the days of Chaldean Ur identified with the fish—an equation which was explained by the Christian Fathers by means of an ingenious anagram on the Greek word *ichthus*. The primitive eucharistic custom survives in the eating of fish on Fridays—the day of Venus—fish being a primitive fertility charm and reputed aphrodisiac.

Early Catholic theology had at-

tempted to abolish the worship of the Great Goddess (Demeter, Aphrodite, Artemis, Isis, etc.,) by substituting the Holy Ghost, symbolised by a dove, the bird of the goddess, for Holy Sophia, the original Mother of Christ. The reintegration of the popular Great Goddess, in the form of the Holy Virgin, did not become general in Catholic Christianity until the tenth century. She at once resumed all the attributes and functions which belonged to her in the pre-Christian cults of Europe. Among these, Catholic theologians enlarge upon the particular protection extended by the Mother of God to adulterers, and she is popularly regarded in many parts of Europe as the special patroness of prostitutes. In Provençal and Italian amatory poetry, the Holy Virgin was substituted for the lady-love, and addressed in similar terms, and Mariolatry afforded an emotional erotic expression and a counterpart to the love of Jesus.

Psychological Aspects.

The most important distinctive difference between early magic and advanced theological religion is that, while in the former the functional use of irrational means had reference to the ordinary needs and desires of daily existence, that functional use of irrational or supernatural factors has, in theological religions, become transferred to spheres which lie outside the control of rational experience, and has tended to have reference to an otherworld life and the welfare of the soul. Religious emotion thus presents, in the more advanced cultures, the purest type of an emotional substitution or escape mechanism.

The function of religion is no longer, as in the lower cultures, to satisfy the immediate needs of existence but, on the contrary, to offer an ideal compensation for the non-satisfaction of desire, and to transfer its fulfilment from this to another life. In a far higher degree than art and imaginative literature, which revolve admittedly round erotic emotion, the escape mechanism of re-

ligious emotion, when it no longer has reference to utilitarian magic functions, is thus psychologically associated with eroticism. Cultural history and psychological experience afford ample evidence of the association, and of the interchangeable character of religious and sexual emotion.

The liability of the former to revert to the more organic forms of the "sublimation" is greatly intensified by the moralistic sexual repression which is a feature of religion in advanced cultures. It has already been noted that the licentious character of magic religion underwent attenuation owing to the growth of strict patriarchal conceptions of the functions of marriage and the family, for the protection and transmission of property. Under the influence of the ascetic mystic ideals of Hellenistic and Judaizing sects, the original relation between religion and sexual stimulation appeared to become reversed in Christianity.

Asceticism has its roots in the universal primitive belief that any form of pleasure is apt to excite the envy of ghosts, who are deprived of it, and of supernatural powers in general. The fierce sexophobia of early Patristic Christianity, and its avowed aim of stamping out sex were, however, without precedent, and can only be regarded as manifestations of pathological conditions in the psychological and cultural situation. The reversal of the relation between religion and sex is only apparent. The testimonies of Jerome and Augustine are emphatic that the sexophobia which led some to castrate themselves, as did Origen, was not a manifestation of sexual frigidity, but was associated with intense sexual passion. The charge of sex-obsession which is sometimes levelled at the modern revolt against Christian sexophobia is, to say the least, as applicable to the latter. The Church Fathers' denunciations of sex as the work of Satan, of woman as the gate of Hell, the tabus and silences of Puritanism, the unremitting vigilance of Victorian moral censorship ar-

gue a far more persistent obsession with sex than do any manifestations of modern literature and sexology.

The particular voluptuary appeal of nuns, in Catholic countries, familiar to readers of Boccaccio and Casanova, illustrates the stimulus-value of religious tabus. In the early days of monasticism, and up to late in the Renaissance period, sexual access to women's convents was particularly sought, and often regarded as a legitimate claim, by princely patrons of those institutions. Brothels are still familiarly known in Europe as "abbeys" and "convents," and the disguise of prostitutes in the attire of nuns is commonly employed as a means of erotic stimulation. In descriptions of conventual orgies, the young woman who, clad in sacred robes, impersonated a miracle-working saint or the Holy Virgin in religious functions and processions, serves as an object of sexual gratification.

The war waged by the early and medieval Church against sensuality was associated with the unprecedented meticulousness of the interest in its manifestations displayed in the "Penitentials" and manuals of confession; with "trials of chastity" by which holy men and women tested their powers of resistance to temptation; with the emotional intimacy between pious women and their spiritual guides; with the sadistic application of penitentiary discipline and flagellations. Religious exaltation showed, in the Catholic Church, a widespread tendency to interest in those forms of occultism and diabolism which it felt bound to combat, but at the same time to recognise as potent. That interest in magic and witchcraft culminated in the prevalence of Black Masses and other sexual orgies under religious form. In Paris, those churches enjoyed a special popularity whose incumbent priests were reported to be expert in diabolism, it being a prevalent belief that the celebration of the Mass was particularly favorable to the success of sexual enterprises when the celebrant possessed occult powers.

Among protestant and dissenting sects, such as the Anabaptists of Munster, the Khlisti and other Slavic sects, and numerous religious communities in England and in America, such as the Perfectionists of Oneida in New York State, the identification of religious exaltation and eroticism was complete and avowed.

The identification is no less apparent in mystic religious emotions manifesting themselves in a "love of God" in which the divine object of emotion is variable, and the love fierce. The language used by St. Catherine of Sienna, St. Theresa, Madame Guyon, St. Theresa of Lisieux, canonised in 1925, is scarcely distinguishable from that of intense erotic turgescence. The mystic "experiences" of female saints and holy women are those of auto-eroticism. Similar are the manifestations of religious devotion to the Holy Virgin which finds expression in the writings of Alphonso de Liguori, De Vega, and Marracius in the same terms as in amatory poetry and literature.

The border-line between such saintly exaltation and the religious forms of maniacal insanity is frequently crossed. Religious ideas are seldom entirely absent from the maniacal manifestations of the insane; and, on the other hand, religious dementia is invariably associated with nymphomania and other sexual manifestations of insanity. Schizophrenic cases of religious dementia commonly exhibit periodic alternation between manic-depressive religious devotion and outbreaks of unbridled maniacal obscenity, exhibitionism, and masturbation.

The association of religious and sexual emotion ranges from every degree of conscious to unconscious reaction, from witting hypocrisy to the disguised sublimations which mark every form of emotional escape from frustration, and which are never complete, or proof against the explosive violence that is the counterpart of every repression. The sexual manifestations of religious impulses have been described as aber-

rations and corruptions. But it may be said, with perhaps more truth, that the sublimation of sexual into religious emotion invariably entails a pathological effect upon the former. Sexual health is incompatible with transmutations and repressions which assume an indirect and emotional character.

R. B.

REPRODUCTION, HUMAN. The subject of human reproduction in its broadest sense involves the study of such various fields as anthropology, anatomy, physiology, embryology, genetics, population, eugenics, and psychology; and furthermore it is possible to regard it from various points of view, such as the biological, the sociological, the historical, the economic, and the ethical. Since any one of these might easily fill a book, and some of them a library, it is evident that narrow limitations must be imposed upon a brief article. Here, therefore, we shall confine ourselves very largely to those aspects of human reproduction which have a direct bearing upon the phenomena of sex, regarded primarily from the biological point of view. The reader can readily follow other ramifications of the subject in the works cited in the bibliography.

Sex and reproduction in man must be regarded biologically as in essence similar to sex and reproduction among the Mammalia in general, and this similarity becomes more marked (approaching identity in many respects) if comparison is made with the monkeys and apes (Primates) rather than with the lower mammals. This statement applies not only to sex anatomy and physiology but also to sex behavior, and in consequence research on these mammals enables us to discover and understand facts and processes of human reproduction which otherwise would remain unknown or unintelligible.

The results of such research (as carried out, for example, by Zuckerman and by Hartman) are having a profound influence upon the establishment of the modern biological view of sex, as scientific knowledge gradually replaces

anthropocentric superstition. Thus significant advances are being accomplished no less in the sphere of ethics than in that of physiology; and indeed these spheres must now be regarded as by no means so distinct and separate as formerly supposed. The subjects of birth control and sexual abstinence (*q.v.*) are good illustrations of this tendency.

Sexual reproduction involves the union of male and female gametes, single cells called sperm and egg respectively, which, being incomplete in certain respects, produce by their union (fertilization) a complete cell (the zygote or fertilized egg) capable of developing by cell division (mitosis) and differentiation (embryogeny) into a fully formed individual of the species. This process of fertilization, the union of protoplasmic elements from (usually) two separate, adult individuals, constitutes the essence of sex; and it accomplishes at least three chief results, namely, a mixture of hereditary traits in biparental inheritance, an avoidance of bodily defects which would be passed on to the offspring in asexual reproduction, and the activation of the egg, which, in an unfertilized condition, will not undergo cell division and development (in mammals).

In the human species the egg and sperm are both microscopic, the former about as large as a printed period, the latter very much smaller and completely invisible to the naked eye. The egg has no power of independent movement, while the sperm is capable of active locomotion, swimming at the rate of about an eighth of an inch per minute (Dickinson, 1933). Each contains one half the number of chromosomes normal to the species, so that the full number is present in the zygote or fertilized egg (48 in man), but otherwise they are very diversely specialized.

A woman produces about 400 mature eggs during her reproductive period (age 15 to 45), while a man produces many billions of sperms, 200 to 300 million at each ejaculation. How long the egg and the sperm can live within the

body of the female in the absence of fertilization is yet to be determined; and the resulting uncertainty is extremely inconvenient for contraceptive theory and practice (Dickinson and Bryant, 1931).

Among animals there are various methods for bringing eggs and sperms together, so that fertilization can take place (Parshley, 1933a), the most efficient being the introduction of sperms in seminal fluid into the body of the female, where any eggs that are present will surely be reached. This method, practiced universally by insects, reptiles, birds, and mammals and by many species in other sections of the animal kingdom, is called copulation, coitus, coition, sexual intercourse, etc., and it involves a remarkable series of anatomical, physiological, and psychological adaptations, to say nothing of the innumerable customs that have grown up around it in human society.

The mechanism of human copulation is briefly as follows: Stimulated by the presence of the female, the nervous system of the male acts to prevent the exit of blood from the cavernous structures of the penis, which in consequence becomes enlarged and stiffened (erect) and is thus able to penetrate into the vagina of the female. The latter, if sexually stimulated, reacts by a corresponding but less obvious erection of the clitoris and associated structures and by the secretion of a special mucus that lubricates the vulva, permitting easy access to the male. Mutual friction brings on a climax of sensation called the orgasm, which, in the male, is accompanied by the ejaculation of semen containing sperms into the vagina of the female close to the external opening of the uterus, into which many sperms pass in a very few minutes, probably by virtue of their own locomotion. These sperms pass on into the Fallopian tubes where they are carried by currents in the tubal fluid to the upper ends of the tubes, near the ovaries, in such numbers that if an egg is present in the tubes it is bound to be

fertilized (Hartman, 1932; Dickinson, 1933; Parshley, 1933a).

The orgasm in the female is not fully understood at present, and there are material disagreements to be found in the statements of supposed authorities. Van de Velde (1930) takes some stock in the reports of active uterine suction, by which semen is drawn into the womb, and some authors attempt to show that fertility depends substantially upon the female orgasm; but Dickinson, in the most recent treatment of these matters (1933), gives good grounds for skepticism. Another question of the greatest practical moment concerns the possibility that orgasm may at times cause the release of a ripe egg from the ovary (ovulation) in the human female, as is the case normally in the cat and rabbit. Certain clinical data suggest this possibility, and Allen (1934) admits it as a hypothetical disturbing factor in efforts to determine the relative fertility of different periods of the menstrual cycle.

In general it appears that subjectively the female orgasm is rather like that of the male, involving a distinct climax of sensation together with some muscular contraction. Perhaps it may be said that the chief differences commonly observed are first, the relatively slower approach to orgasm in the female; second, a wider involvement of the body in the relief of detumescence; and third, a greater variability in location, quality, and intensity of sensation. In the male one orgasm is more nearly like another. In both sexes the actual duration of orgasm seems to be about ten seconds, but here the limits of normal variation are quite unknown.

In the male the muscular contractions of ejaculation are entirely involuntary once the orgasm is started; but in the female the case is quite different. Certain contractions of the vagina and of the muscles that move the pelvis as a whole are often involuntary at the moment of orgasm, in some women; but there are in addition a great variety of coital movements which must be volun-

tarily learned as a part of amatory technique and which may become habitual through practice (Van de Velde, 1930, 1931).

Sex development, while in a sense continuous throughout the life of the individual, is especially marked at certain periods. In the early embryo certain internal structures representing both sexes are present, but the external organs exist as a single set of indifferent *anlagen*. After the second month these parts develop diversely, into the male or female sex organs, under the influence of the chromosome constitution of the zygote and the sex hormones. By the fourth month the sex differences are clearly marked, and with the descent of the testicles just before birth the genitalia are fully and clearly differentiated in all save abnormal cases. Occasionally imperfect development occurs so that erroneous sex identification is made at birth (pseudohermaphroditism), the individual growing up as an intersex, usually regarded as a female with hypertrophied clitoris (Parshley, 1933a; Dickinson, 1933). Complete, true human hermaphrodites are unknown; but there are on record a few cases in which both ovarian and testicular tissue and a mixture of male and female internal organs are present.

The next period of marked sex development is puberty, the time at which mature eggs and spermatozoa are first produced. This occurs in the female in temperate regions at the age of about thirteen years and nine months and is marked by the first menstruation and the development of pubic and axillary hair; in the male the average time of puberty is one year later, as marked by change of voice, appearance of axillary hair, and replacement of downy pubic hair.

The first production of sperms occurs at about this time but is difficult to determine statistically. The four or five following years constitute the period of adolescence, during which the secondary sex characters complete their development and full bodily maturity in gen-

eral is reached. Reproduction is possible and sex activity is normal after puberty, but in civilization various economic, educational, and moral factors tend to affect behavior, giving rise to problems which are now beginning to receive the realistic and objective study they deserve (Lindsey, 1927; Wile, 1934; Parshley, 1933b; Cox, 1933).

In the male reproductive ability undergoes a gradual diminution after the age of fifty, but often lasts beyond sixty or even seventy, there being no definite, normal time of cessation; but in the female the menopause occurs definitely at about age forty-five, when menstruation ceases and no more eggs are produced by the ovaries, although sex activity may continue unimpaired for many years.

Sexual and reproductive periodicity, while scarcely discernible in the male, is well marked in the female, the normal woman exhibiting a more or less regular menstrual cycle throughout the reproductive portion of her life. This cycle, which commonly lasts for 28 days on the average (more rarely 21 days), consists, to be brief, in the following sequence of events: Menstruation, bleeding from uterus with disintegration of its lining—four days; regeneration of lining and preparation of egg in ovary—ten days; ovulation—middle of cycle; hypertrophy of uterine lining in preparation for reception of egg if fertilized—fourteen days.

These events are regulated by the varying activities of the endocrine system and represent essentially a recurring preparation for reproduction. They are accompanied by changes in the general physiology and psychology of the individual, by more or less distinctly marked variations in sexual feeling, and by alternating times of fertility and sterility. Furthermore, recent investigation shows that ovulation does not necessarily occur in every cycle (Aberle, 1934).

It is obvious that exact knowledge of the menstrual cycle has direct bearing on many practical questions of social

and personal importance, in addition to its high scientific interest in the field of mammalian physiology; and since the discovery that apes and monkeys exhibit the same type of menstrual periodicity—even to many matters of detail—contemporary research on the subject has been very active and fruitful (see, e.g., Allen, 1932; and Sanger, 1934). The "safe period" method of birth control depends upon the supposed ability of the individual or her medical adviser to predict the sterile portion of the menstrual cycle and assumes an unproved degree of regularity.

If insemination is followed by fertilization and pregnancy, the dividing egg (early embryo) becomes implanted in the lining of the uterus and through changed endocrine action the menstrual cycle is interrupted. The uterus becomes modified for the protection and, through the placenta, for the nourishment of the growing embryo, the organization ordinarily destroyed by menstruation being obviously adapted for the support of the embryo and hence discarded when fertilization does not take place. The beginning of pregnancy is recognized by a number of traditional signs, none of which are certain, and, in recent years, by the Aschheim-Zondek endocrine test, which is much more reliable in early stages (Parshley, 1933a).

In the first two months the embryo reaches a length of about one and one-fifth inches, after which it is conventionally called the foetus; and in nine months or about 40 weeks (270-280 days) full normal development is accomplished and birth occurs. Prolongation of pregnancy beyond 40 weeks is rare, but premature birth is common and likely to be successful if less than two months early. Expulsion of the foetus or embryo before the seventh month is regarded as pathological (miscarriage or abortion) and rarely results in a living child. The period of pregnancy is normally a time of well-being for the woman, if nourishment and other environmental circumstances are

favorable; and it does not require interruption of sexual activity except toward the end.

Childbirth is brought on by endocrine controlled contractions of the muscles in the walls of the uterus, and it involves a considerable hypertrophy and stretching of the vagina and vulva (Dickinson, 1931, 1933). The pains always more or less severely felt originate in the uterine contractions and seem to be of the same nature as the pains often experienced in menstruation. The process takes, on the average, eighteen hours for the first child, twelve on subsequent occasions. The difficulty and danger of childbirth vary tremendously with the condition, nationality, and individuality of the mother, being apparently increased as a rule by the circumstances of civilization. In about eight days the vulva and vagina regain their normal condition, and in a few weeks the uterus does also, being reduced from two pounds in weight to two or three ounces. Under savage and simple, active conditions of living, childbirth may cause little interruption in ordinary pursuits, while among the highly civilized weeks of lying in bed may be required.

At the time of birth the breasts show signs of development (also under endocrine regulation), and milk is secreted shortly after, on the second to the fifth day. This is the normal food for the infant and is all-sufficient for eight months to a year, when weaning commonly occurs. Among various peoples lactation may go on for as much as ten years, probably for reasons of economy, supposed freedom from further pregnancy, tribal custom, etc. Usually menstruation does not begin during the first three months of nursing, and often during the whole period; and conception is unlikely, though possible, during such periods.

Nursing is normally pleasurable to the mother, because of the erogenous nature of the nipples; and this biologic fact is undoubtedly significant as an agent in the evolutionary develop-

ment of the mammalian family as well as in the growth of maternal love in the individual. Without this remarkably ingenious incentive, it hardly seems likely that the arduous care required by the prolonged infancy of the higher mammals would have been successfully assumed.

The sex ratio at birth is about 105 males to 100 females, but the evidence tends to show that at conception the ratio is nearer 120 to 100, indicating that the male-determining sperms succeed in fertilizing eggs more often than the female-determining. The reason for this is unknown, though possibly the latter are larger and slower in locomotion. Males die more often than females from early embryonic life, through childhood, to old age; so that the number of young boys and girls is about equal, and in old age the women outnumber the men. The cause of this is probably to be sought in the facts of sex-linked inheritance, as a result of which males are exposed to the effects of all recessive weakening and lethal genes carried by the X-chromosome, whereas females, when heterozygous for these genes, are protected against them.

Human reproduction, like animal reproduction in general, naturally results in the over-production of offspring—an advantageous condition under primitive circumstances of unmitigated natural selection but a source of various dangers under civilization. Surplus populations ultimately outrun the available job-supply if not the food-supply and thus lead to wars and lowered standards of living; and in all developed countries such excess of births tends to show itself most distinctly among the least privileged classes, which presumably contain a relatively high amount of inheritable deficiency and seem to show a relatively low capability for cultural-intellectual development.

In this way a differential birth-rate is established, which inevitably leads to fundamental changes for the worse in the inherited capacities of the population in general (Lorimer and Osborn,

1934; Schwesinger, 1933). In consequence, the need for eugenic measures, such as sterilization of hereditary defectives and the dissemination of birth control information among the less privileged, arises; and the study of human reproductive biology assumes an intensely practical aspect, which seems likely to increase in importance as the problems of civilization become more pressing (Popenoe and Johnson, 1933; Parshley, 1933a).

There remains to be examined in conclusion the relation between sex and reproduction, a question which is essentially biological in character and yet has fundamental importance for scientific sex ethics. The sex impulse—the complex of instincts, behavior patterns, and desires which draw male and female together and lead to copulation—is deeply implanted in all sexually reproducing species, including man, because the continuance of the species depends upon it and during the course of evolutionary history all types in which it was weak have long since been weeded out by natural selection. Thus the sex impulse is perhaps the most powerful and ineradicable of the fundamental, biologic urges that motivate behavior, and among the Primates, and especially in man, it has assumed a physiological and psychological importance out of all proportion to and quite apart from its purely reproductive function (Guyon, 1934).

Man alone is capable, if he so desires, of regulating and even repressing the normal expression of the sex impulse; but all attempts at thorough-going suppression have been failures. In the absence of natural expression—as conventionally required, for example, of unmarried adults under civilization—conditions of abnormality, frustration, nervous disease, puritanical oppression, law-breaking, and hypocrisy in general show that the sex impulse is not destroyed but only forcibly twisted so that it emerges in questionable shapes (Wile, 1934).

Another aspect of the sex urge has been distinguished as the mating impulse, the tendency toward more or less prolonged association of the sexes. Below man and the other Primates this impulse is very rarely found to exist, the males commonly dissociating themselves from the females after the sex impulse has been satisfied at the breeding season; but in the human species and its simian relatives, where the female is ready for coition at all times (unlike the female of the lower mammals), the mating impulse has grown up as a result of this lasting attraction, as a means for insuring the satisfaction of the more fundamental sex impulse.

In consequence, the relatively permanent Primate family has become established, consisting of one or more mothers, father, and offspring, with the enormously important capacity to protect the young during the long infancy required for the individual development of intelligent behavior. Thus it seems clear that only through the presence of a continuously powerful sex impulse was it possible for intelligent human society to emerge as the supreme achievement—so far—of evolution in the biological world.

In the end, however, as already noted, humanity finds itself still powerfully motivated by the sex impulse and the mating impulse, which, in spite of social forces that imperatively demand the restriction of reproduction, not only retain in full their pristine energy but even extend their action far beyond the merely biological sphere through their pervasive influence upon the arts and upon innumerable other aspects of social life. It is only through the free, unbiased investigation of human reproductive biology that the true nature of the sex urge can be properly understood, the biological view of sex come to replace the moralistic, and the ineffectual, essentially superstitious treatment commonly accorded this field of human perplexity be superseded by a rational, scientific ethics.

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H. M. P.

RETICULUM, a network of gold or silk threads, or of other material, worn by women as a head-dress. The antiquity of this covering is attested by the Father of Poetry. The reticulum is seen in several paintings found at Pompeii. The closed head-dress, often depicted on ancient vases, was known as *calantica* or *calvatica*.

Homer (*Iliad*, xxii, 469): "Far from off her head she cast the bright attiring thereof, the frontlet and coif and kerchief and woven band."

REVERSAL, SEX. Sex reversal is the term used to describe the complete transformation of male into female, or vice versa. Any discussion of this phenomenon, therefore, requires exact definitions of what constitutes a male and a female respectively.

In man it is accepted that every individual normally is either a male or else a female; that maleness essentially is a state associated with the production of spermatozoa, femaleness that associated with the production of ova. A male is an individual efficiently

equipped for the elaboration of spermatozoa, for the conveyance of these toward the site of fertilization and for the assumption of certain behavior patterns in wooing and mating.

A female is one who is efficiently equipped for the elaboration of ova, for the conveyance of these to the site of fertilization, for the assumption of behavior patterns in wooing and mating that are complementary to those of the male, for the prenatal care of the embryo and fetus and for the postnatal care of the offspring.

Male differs from female typically in sex chromosome constitution, the female having an XX chromosome pair, the male but one X chromosome associated with a smaller Y chromosome. For this reason the male is constitutionally heterogametic, the female homogametic. Every egg elaborated by the female includes one X chromosome within its nucleus, whereas of the spermatozoa elaborated by the male there are two kinds, one carrying an X chromosome, the other carrying a Y. An X chromosome-bearing egg fertilized by an X chromosome-bearing sperm yields an XX individual (a female), whereas any egg fertilized by a Y chromosome-bearing spermatozoon yields a male, XY in sex chromosome constitution.

Male differs from female in respect of the site, structure, and elaborated products of the gonads; the reproductive organs of the male being testes, those of the female being ovaries.

The accessory sexual apparatus consisting of ducts and associated glands (vasa deferentia, prostate, seminal vesicles) are derived in the case of the male from the Wolffian ducts, whereas in the case of the female these structures (uterus and Fallopian tubes) are derived from Müllerian ducts.

The external genitalia of both male and female are derived from the same embryonic structures. In the male they take the form of a penis and scrotum, in the female a vagina and clitoris.

Certain rather indefinite physiologi-

cal and psychological characters distinguish the sexes, and particularly from about the time of puberty certain skeletal, muscular and cutaneous differences make the identification of the sexes a matter of the utmost simplicity.

Complete sex reversal, theoretically therefore, comes to mean that one sex chromosome constitution shall become transformed into the alternative; that one type of gonad shall become replaced by the other; that the derivatives of one of the embryonic ducts shall give place to the derivatives of the other; that clitoris and vagina shall become remodelled into penis and scrotum, or vice versa; that sex dimorphic characters, such as the timbre of the voice, distribution of the hair, degree of development of the mammary glands, degree of development of the skeletal and muscular systems, shall cease to be typical of one sex and become such as are appropriate to the opposite.

It is the rule for all the sex dimorphic characters to be in harmony; that is to say, it is usual for a fertilized egg with an XY constitution to develop into a complete male, and for the XX zygote to become a complete female, with sex chromosome constitution and the structural, physiological and psychological characters all in complete agreement.

Nevertheless, it is a demonstrated fact that an individual with a sex chromosome constitution of one sex can develop with all the bodily characters of the opposite. It is assumed that in every individual there are present in its beginning as a fertilized egg genetic factors which predetermine what the expressed sexuality of that individual shall be.

It is further assumed that of these genetic factors which relate to sex there are two contrasted kinds: male-determining and female-determining; that in the normal male the male-determining factors are always in efficient excess of the female-determining, and that in the normal female, the female-determining are always in efficient excess of the male-determining during that period of

life when the sexual characters are being differentiated.

It is for this reason, it is assumed, that the individual which begins its life as what may be called a genetic male (XY) becomes, as development proceeds, a functional male; a genetic female (XX) a functional female. It is established that in certain forms of life these male-determining and female-determining genetic factors are resident in different chromosomes, the female-determining, for example, being on the X chromosomes, the male-determining on the autosomes; and it has been shown, that by altering the normal numerical ratio of the X and the autosomes, intersexes can be produced.

In other forms it has been demonstrated that the male-determining genes, of which there are many, differ amongst themselves in respect of potency or strength as do also the female-determining genes, and that therefore it is possible deliberately to congregate, by appropriate matings, two sets in a given individual, one set male-determining and the other female-determining, of such relative potency that a genetic male can become transformed during its initial development into a functional female for the reason that though the male-determining and female-determining genes are present in the normal numbers, they are, in respect of relative strength, in disharmony, the "strong" female-determining genes overwhelming the relatively "weak" male-determining genes in their action. For the same reason a genetic female can develop into a functional male.

But in such cases the sex chromosome constitution itself remains unaffected. It is further established that in many forms of life sexuality is an exceedingly labile character, and that an individual in these forms can and does change its sex with the seasons with the same ease, it would appear, as that with which we change our clothes.

But it is very improbable indeed that the phenomenon of sex reversal as seen in the insect and the oyster has much

in common with sexual abnormalities such as are encountered in the human subject. However, it is possible to ascend the scale of complexity amongst living things and appeal to the fish and to the fowl for information that may probably have a bearing upon problems of intersexuality in man, since, as in man, so also in fish and fowl, hormones are known to be effective agents responsible for the development and maintenance of many of the characters that pertain to the sex equipment of the individual.

In the frog it has been shown that over-ripeness of the egg can lead to a complete disharmony between the sex chromosome constitution and the functional sex of the individual. By delaying fertilization for some hundred hours, it is possible to cause all those that would normally develop into females to assume the complete sex equipment and behavior of the male.

Presumably, the physiological conditions which are associated with over-ripeness in the egg are such as to provide a male-determining stimulus which completely overwhelms the normal tendency on the part of a genetic female to assume female characters. In the fish it has been shown that physiological exhaustion of the ovary can be and is followed by the development of testicular tissue, and by the exhibition of the external male characters. In the sword-tailed minnow, for example, it is by no means unknown for an aged female with nonfunctional ovaries to develop testes and to assume the sword-tail which is so characteristic of the male.

In the domestic fowl ovariectomy is commonly followed by the development on the right side of the body of testicular tissue, and in exceptional cases spermatozoa are actually elaborated in this, and at the same time the head furnishings and plumage become as those of a typical male. But in the frog, the fish and the fowl, the structural differences, sex dimorphic differ-

ences, in the external genitalia are but slight.

In the mammal, on the other hand, the differences are great. From the point of view of the plastic surgeon, perhaps, the conversion of the female external genitalia into an excellent imitation of those of the male would not be impossible, but it is exceedingly difficult to imagine that by a process of dedifferentiation and redifferentiation, no matter how strong the stimulus might be, the penis and scrotum of the male could become transformed into the vagina and clitoris of the female. If sex transformation were possible at all in the human subject after differentiation has once proceeded, then one would expect it to occur more readily in the direction female to male than in the opposite.

Nothing very deep or accurate is known of the physical basis, if there be such, of such conditions as complete transvestism in which an individual of one sex, driven by an inner urge, ardently desires to become and to behave as an individual of the opposite sex. The claim that the implantation of gonadic tissue of a normally sexed individual into such a patient will remove this disharmony has not been substantiated, and such accounts as that which recently appeared in the book with the title of "Man into Woman," for example, add nothing whatsoever to our knowledge of the physiology and psychology of sex, or even to pornography. Such cases are best left to the expert medical psychologist, for it would seem that the interference of the surgeon can only make confusion worse confounded.

Though it is most improbable that complete sex reversal can possibly happen in the human being after sexual differentiation has become well advanced, and it is certainly true to say that nothing that is known can possibly affect the sex chromosome constitution of the individual, there are two forms of progressive intersexuality which would appear to be illustrations of this phenomenon.

The first is that which is quite commonly reported in which a girl about the time of puberty is found to be a boy. The usual story in these cases is that a child who has been brought up as a girl is found by her parents or playmates to be abnormal in respect of her external genitalia. Her voice shows signs of breaking. And when once attention is drawn to her, it comes to seem obvious to everybody that she is indeed a male. It has to be remembered that the identification of the sex of the newborn individual is a very casual affair. If there is a penis and scrotum, the individual is a boy; if there is not, it is a girl. In these cases the first sign of abnormality as puberty approaches is the enlargement of the clitoris. A little later it is seen that the distribution of hair is that characteristic of the male. There is no mammary development, and the voice becomes deep. Commonly, on examination, small, painful, moveable, tumor-like objects can be palpated in the inguinal region. If a portion of such is removed, its structure is found to be that of a cryptorchid testis.

The correct explanation of this abnormality would seem to be that the individual is, and always has been, a male, but that, owing to an abnormality during embryonic development (this possibly taking the form of a delay in the time at which the sex hormone elaborated by the testis appears in efficient quantity) the structures of the accessory sexual apparatus and external genitalia develop in the absence of the directing stimulus of this sex hormone, and thus the derivatives of the Müllerian and Wolffian ducts both develop under the common stimulus of nutrition.

Later, the sex hormone is efficiently elaborated, but too late to direct in whole or in part the differentiation of these structures of the sex equipment. This attempted explanation finds considerable support in the examination of very similar cases of pseudo-intersexuality in domesticated animals, in which are to be found cryptorchid testes lying

in a broad ligament, complete male and female sets of accessory sexual apparatus with a blind uterus sitting on the prostate. And the evidence derived from this source suggests very strongly indeed that the degree of development of the derivatives of the Müllerian duct in such an individual is an indication of the time during development at which the hormonal stimulus elaborated by the testes becomes sufficiently active.

The greater the development of the uterus the later did the male sex hormones take charge. It would appear that, as puberty approaches, the phallus can again respond to the stimulus of the male sex hormone by another phase of active growth. And at the time of puberty and thereafter the male sex hormone is present to direct the development of all those so-called secondary sexual characters which are assumed at this time and later. In such cases, obviously the correct procedure, based upon a diagnosis which would include a histological examination of the gonads, is to regard the individual as an abnormal male and repair his deficiencies as far as possible in the male direction.

In contrast with this type of intersexuality, there is another which possesses many features in common with it. In an individual who has been regarded as a girl, as puberty approaches (and this of course can vary in time from case to case) the clitoris becomes greatly enlarged. Mammary development occurs. The distribution of the hair is perhaps indefinite in type, or else female. In these cases, however, no palpable tumors are to be found in the inguinal region, but an exploratory laparotomy will reveal gonads in the ovarian site and with ovarian structure, although the medullary portion is found to be greatly enlarged and distinctly abnormal in its constitution.

In these cases it is not uncommon to find a tumor of the adrenal. It is to be assumed that these cases are genetic females in which, for reasons as yet unknown, there develops a male-determin-

ing stimulus, derived from the adrenal tumor and from the ovarian medulla which provokes the clitoris to hypertrophy. Such cases of virilism should be treated as abnormal females and clitoridectomy performed.

F. A. E. C.

RHODOPIS. Egyptian courtesan, whose "labors," popular report had it in antiquity, went to pay for the pyramid of Mycerinus. She lived under the reign of the Pharaoh Amasis, about 600 B.C. (Herodotus ii, 134; Athenaeus, Dindorf edition, 596B; Strabo, Casaubon's Pages, 808.) She is not to be confused with a Rhodopis who was Psammitichus' queen (Aelianus, *Variae Historiae*, xiii, 33). Of Thracian birth, she had been the companion in slavery of Aesop, in the house of Iadmon, at Samos. She was brought to Egypt by Xanthus of Samos, who had purchased her that he might exploit her as a courtesan. She became extremely successful and renowned, and had a host of admirers, among them, Sappho's brother, Charaxus of Mytilene, who became so smitten with her that he put up a large sum to buy her freedom. Rhodopis' beauty and accomplishments after that earned her great wealth.

A tenth part of what she possessed she spent on the manufacture of iron brooches, which for some unknown votive reason she hung up in the temple of Delphi, where they were still to be seen in Herodotus' time. In Plutarch's day, the brooches were no longer to be viewed, the place alone being pointed out where they once had been. The fact that the pyramid of Mycerinus had been constructed a number of centuries before Rhodopis was born could not alter the belief of the Egyptian populace; and writers such as Strabo and Diodorus Siculus, if they did not actually believe that she "paid" for the pyramid, at least accepted another report, to the effect that it had been built by her lovers for her pleasure—Rhodopis, from this, would seem to have gone in for pyra-

mids. Aesop is said to have paid for her kisses with his fables.

There is one of the countless versions of the old Cinderella legend which has Rhodopis as its heroine. One of the courtesan's slippers dropped from her foot one day, when an eagle swooped down and carried it off. The bird dropped the slipper in the lap of Amasis, the Pharaoh, who swore that he never had beheld a foot so small and comely as to fit it. He started a search for the foot in question, after having tried the slipper on all the women in his dominions. When at last he found its owner, he made Rhodopis his mistress.

Sappho is said to have bitterly reproached Rhodopis for the latter's treatment of the poetess' brother. Pausidippus has an epigram which alludes to this, and which at the same time gives something of a picture of the courtesan:

"A bow of ribbon bound your flowing tresses; voluptuous scents exhaled from your trailing robes; vermilion-colored as the wine which smiles in the chalices, you twine your lovely arms about the handsome Charaxus. Sappho's verses are a tribute that assures you of immortality. Naucratis (the city) shall preserve the memory of you, so long as boats go joyously up and down the majestic Nile."

RIMA, an opening between two symmetrical parts; a cleft, crack, slit; hence rima was sometimes used for vagina, as by Juvenal (iii, 97). *Rima clunium*, the cleft between the buttocks. *Rima pudendi*, the vulvar slit, or cleft between the vulvar lips.

ROBIN, LOUIS-CHARLES-JEAN-PAUL (1837-1912), French pedagogue and sociologist, born April 3, 1837 at Toulon. He came from a pious bourgeois family. A student at the Ecole Normale Supérieure, he became professor of sciences in the lyceums; Darwinist and Positivist, his philosophical and sociological opinions obliged him to relinquish his functions. In 1866 he joined the Internationale, becoming one of its most fervent adherents and most distinguished leaders; he became a friend of Bakunin, James Guillaume, Marx, later of Kropotkin and Reclus. He agitated in France and was imprisoned; in Belgium from where he was

expelled; in Switzerland and England. Upon the instigation of Marx he was elected member of the "Conseil Général de l'Internationale"; later he was expelled on account of divergence of doctrines and tactics. Settling in London, he became adjunct professor of mathematics at the University College, and of French in the Royal Military School at Woolwich. Having made contact with the English neo-malthusian leaders, he adhered to the doctrines of Annie Besant and Charles Bradlaugh.

At the request of Emile Littré, he published in the *Revue Positive* (1867-72), his views on positive education without religious or patriotic basis; returning to France (1878), he attempted the application of his pedagogic views at Cempuis in l'Oise (1800-94). Dismissed on account of his "dangerous" internationalistic and anti-religious teachings, he devoted himself to theoretical and practical neo-malthusian propaganda and to the struggle against existing sexual morality. He preceded this, by diverse publications destined either for his socialistic or proletarian comrades: *La Question sexuelle* (1878), *Le Secret du bonheur* (1879), which earned for him (1883) a disciplinary punishment by the Prefect of the Seine. He delivered "Adresse neo-malthusienne," at the Worker's Congress in Marseilles (1879) and established (1890) a sort of a dispensary where poor women could obtain at a low cost practical advice and the necessary objects for sexual prophylaxis and contraception. From 1894 on, the year of his dismissal as Director at Cempuis, he published propaganda sheets: "To Women," "To Married People," and later a summary of his lectures, which brought him the grossest calumnies and violent insults from the press and also threats of legal prosecution. However, the interest of the public at large in the sexual question and population had been aroused.

In 1895 he attempted to establish a league which was to have as its patrons economists and physicians who shared

his ideas. But it was not until August 1896 that he was successful in founding the League of Human Regeneration and publishing *Regeneration*, a small monthly which in spite of difficulties, the sharp hostility of the press, illness and litigation, survived until 1908. His intention was to spread correct physiological and social ideas, enlightening parents in cases where they should show prudence in the number of their children; thus assuring, under this knowledge, their freedom, especially that of the woman; discussion of all questions relating to sexual liberty; legislative reform of marital union; and sexual relations in general.

His propaganda was not merely copying previous foreign propaganda. He broadened the scope and tied up malthusian principles with socialistic ideals. It was not merely a philanthropic crusade against poverty, but a war (without violence) against capitalism, against regimes of authority, chiefly for general human emancipation, for social improvement, for universal liberation. According to him, birth under good economic conditions, together with an education based on realities, produces generations capable of establishing a good social organization.

His work was as audacious as it was difficult: it displeased the malthusian conservatives because it was socialistic; it displeased his socialistic and anarchistic friends because it was neo-malthusian. The beginnings were painful, as for all propagandists who hurl themselves against general opinion. Is it not a fact that when a path, no matter how narrow, is broken by the hard work of pioneers, others will come and work to widen it? Paul Robin was an admirable example of serenity in the face of universal hostility.

There are no sexual problems discussed today in their economic and social repercussions which were not anticipated in his periodical and brochures. He combatted marriage, demanded sexual freedom for woman as well as for man, and in his *Free Love*,

Free Maternity, proclaimed the necessity of sexual education showing that eugenics and puericulture depend on such education; in his *Propos d'une fille*, he defended prostitutes, while fighting prostitution. He replied to his adversaries, in economic and social fields, in *Pain Loisir Amour, Contre la nature, Population et prudence procréatrice, Régénérescence de l'espèce humaine, Contre et pour le néo-malthusisme*. He did not neglect the study and propagation of all practical means already known, publishing *Moyens d'éviter les grandes familles*, and in his journal indicates frankly combinations which would make a perfect contraceptive. (*Régénération*, March 1901).

To spread his ideas all means seemed suitable to him, even poetry (*Vers Régénérateurs*) and music. He did not limit himself to writing. He spoke before political groups, freethought societies, Masonic lodges, learned societies, congresses. He was active in all circles: medical, legislative, authors' and savants' societies. He was the founder of the Universal Federation of Human Regeneration, of which he was vice-president (1900). Following dissension in the League he founded, he withdrew from the movement (1908), feeling certain that his efforts would be continued.

Paul Robin was interested not only in the sexual question and the problem of population; he was a warm protagonist of popularization of scientific truths, and was among the first to appreciate research and discovery. To a certain degree he himself was an innovator. He committed suicide August 31, 1912. It was a deliberate scientific suicide, I would say, in accordance with the ideas he developed years before. He was a man of superior intelligence, highly cultured, enthusiastic, loyal, thoroughly disinterested.

Never did he derive any profit from his diverse activities in which he distinguished himself. He led a simple life, his incessant researches for the good of humanity made of him the purest apostle of his generation—"a

saint" says Victor Margueritte. His influence was notable. While not writing much, he was very active and tremendously inspiring. Nearly all popular French and some foreign publications on the sexual question of his time were inspired by his views. Brieux, Michel Corday, Kolney, Daniel Riche, Victor Margueritte, and others, have written novels and dramas inspired more or less by the ideas he promoted. The present leaders of the French neo-malthusian movement are, from a certain point of view, his disciples.

G. G.

ROTIFERA, REGULATION OF

SEX IN. Rotifers are microscopic aquatic animals each consisting of a few hundred cells and are classified among the lowly multicellular forms. There are several hundred species varying greatly in details of structure and in their habitats but nearly all agreeing in possessing a whorl or whorls of cilia on the anterior end which are in a constant peculiar motion reminding one of rotating pinwheels. Thus the Latin name literally translated means "bearing wheels." These whorls of cilia are the organs of locomotion by which the animals swim through the water.

Rotifers are of no economic importance except that they serve as food for many other aquatic animals which in turn are eaten by various fish. In nearly all bodies of water, whether permanent or transitory, and wherever located, whether at the poles or the equator, some species of rotifers may be found. They are truly cosmopolitan.

Life History. During certain periods of the season only female rotifers exist. In many species the females produce eggs rapidly which do not require fertilization and hatch within a few hours into daughter females, which mature and are themselves producing eggs at the end of a day or two. This parthenogenetic form of reproduction by females only may continue for many generations. In the laboratory it has been continued for at least three years, resulting in several hundred partheno-

genetic generations of females. In a few species this parthenogenetic form of reproduction is thought to continue indefinitely, as male individuals have never been found although searched for persistently by many observers for several decades. This parthenogenetic method of reproduction insures a rapid increase in numbers with the maximum efficiency of the food supply. In the majority of animals food is required for both a male and a female while they are creating offspring, but each of these parthenogenetic female rotifers can produce as many offspring as the ordinary male and female parents acting together, and consequently reproduce at twice the rate on the same amount of food supply.

Usually when the female population has become very large and the environmental factors have become different, a change in many of the females occurs. Instead of further production of females by the race, males are produced in great abundance from parthenogenetic eggs. These males pair with the females, in some species only young ones, that are destined to lay parthenogenetic male-producing eggs. Later these females mature and lay large, thick-shelled, fertilized eggs. These eggs may be desiccated during long periods of droughts, and also may endure very low winter temperatures but survive both of these adverse conditions. As all individuals of the majority of species perish whenever the pools become dry or frozen such eggs insure the continuation of the race.

In the laboratory some of these fertilized eggs have been kept in stale culture water for twenty-two years and hatched readily when placed in fresh water. They seemed to show no ill effects of this long enforced rest. Other fertilized eggs have been placed in liquid air at a temperature of about -190° C. for several hours, and later when placed at room temperature hatched into normal females. This latter observation shows that these eggs are adapted for low temperature condi-

tions that they never experience outside the laboratory.

A large female population insures the production of vast numbers of these drought- and winter-resisting eggs, thereby increasing the possibilities that some of these eggs will survive all adversities, and will remain alive to start the race again whenever favorable conditions occur.

Chromosomes. There is considerable evidence that the females possess the diploid or full number of chromosomes, whereas the males possess the haploid or one half the full number. In one species, *Asplanchna amphora*, the females have the diploid number of chromosomes of twenty-six while the males have the haploid number of thirteen. In reproduction the parthenogenetic eggs which develop into daughters produce only one pole cell, and in so doing do not reduce the number of chromosomes. On the other hand, the parthenogenetic eggs that develop into sons produce two pole cells, and in producing the second one reduce the number of chromosomes from twenty-six to thirteen.

If these parthenogenetic male-producing eggs are fertilized by the sperm containing thirteen chromosomes, the full number of chromosomes is restored to twenty-six and the eggs develop into females instead of into male individuals. This is a striking example of a case in which the male sex not only is determined while the egg is being developed and matured but also in which the male sex is changed into female sex whenever the egg is fertilized.

The parthenogenetic male egg normally develops into a male individual having only thirteen chromosomes. These haploid males lack the digestive system, and consequently, can neither consume food nor increase in size. They remain dwarf and degenerate throughout their short lives. The female producing these male eggs stores enough food in each egg so that the young male has nourishment enough not only to develop to practically sexual maturity at

the time of hatching, but also food enough for him to live his entire life without eating. When they are kept at 17°–18° C. they usually live four to five days.

The males produce two kinds of sperm—one being motile and functional, having thirteen chromosomes; while the other kind is non-motile and apparently rudimentary, possessing about half the number of chromosomes of the motile sperm (Fig. 1). Probably all the motile

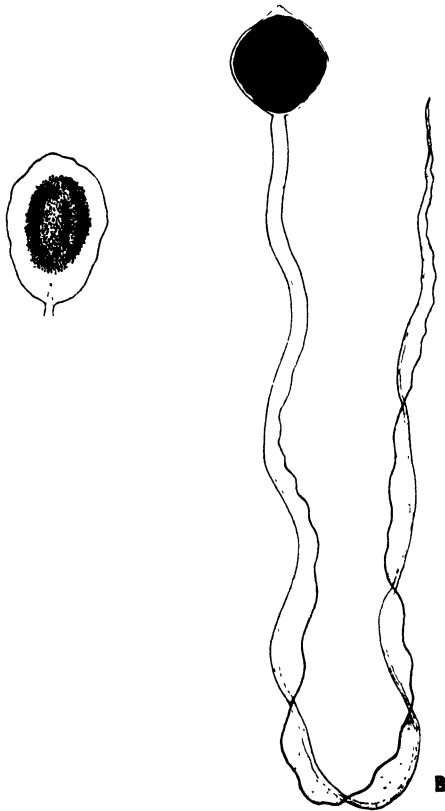


FIG. 1. DIMORPHIC SPERM OF THE ROTIFER, *BRACHIONUS MULLERI*

A. Rudimentary sperm with short, non-vibratile tail. B. Normal sperm with long, vibratile tail.

sperms are identical as far as sex-determining power is concerned, and as much also can be said of the parthenogenetic male eggs. Whatever the sex-determining factors may be, they always produce the same result when meeting

in the union of the sperm and parthenogenetic male egg in fertilization, namely a female. Here is a case where the unfertilized egg would normally develop into male but when fertilized the sex is changed into female. How this is brought about is unknown.

Production of the Sexes Regulated by Environmental Factors. It has been suspected for many years that the sudden appearance of myriads of males among a parthenogenetic female population might be due to some change in the environmental factors. Many different factors have seemed to be influential but very few of them yield consistent results when tried experimentally.

Some investigators have found that an abundance of oxygen seems to cause a sudden appearance of males, while certain other investigators have reached the conclusion that a sudden change in any of several factors, such as acidity, or alkalinity, or chemical substances in solution in the culture water, may cause the production of males. That a uniform alkaline culture water together with a monotonous diet seems to favor the continuous production of females and to repress the production of males has been observed by several investigators.

A change in diet has been found to yield fairly consistent results in repeated experiments with several species of rotifers. In *Hydatina senta* (Fig. 2) quite extensive experiments have been carried out by several investigators which are somewhat as follows: A female from a parthenogenetic egg is fed on a pure culture of a species of a colorless flagellate, *Polytoma*. On this diet all of her daughters will mature and in their turn produce daughters. If, however, after this original female has been on the *Polytoma* diet for a day or more and has produced several daughters, the diet is suddenly changed to one of a pure culture of a green *Chlamydomonas* a change takes place in the daughters that the original female is producing. Instead of producing daughters them-

selves as their older sisters have been doing, they now produce sons.

Here is a clear case that can readily be demonstrated that one kind of diet will cause a mother to produce few or many daughters, all of which will produce female offspring; but whenever the

produced; but as soon as the green *Chlamydomonas* diet was introduced, over eighty per cent of males were produced within three to four days.

The same results also may be obtained by feeding a scanty green diet which will cause a mother to produce all fe-

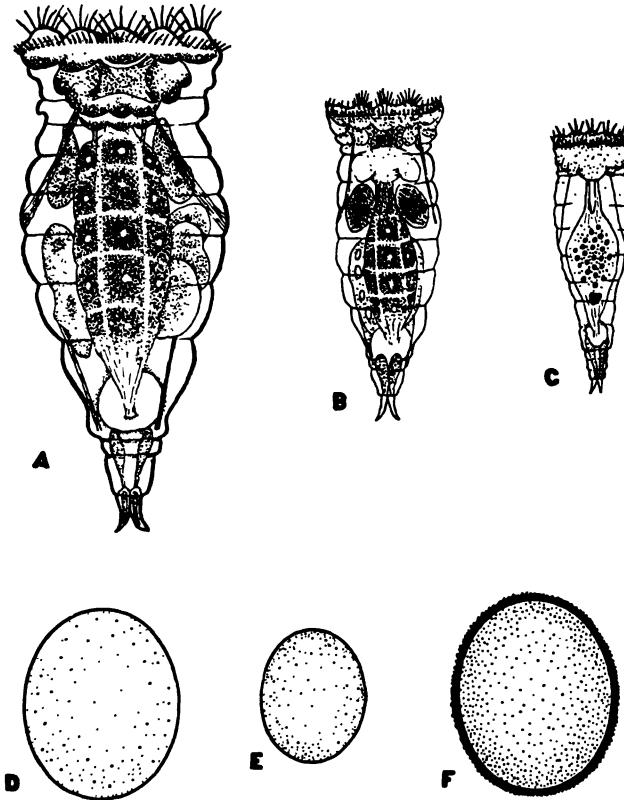


FIG. 2. THE ROTIFER *HYDATINA SENTA*

A. Adult female. B. Young female. C. Adult dwarf and degenerate male showing large sperm sac. D. Parthenogenetic female-producing egg. E. Parthenogenetic male-producing egg. F. Fertilized egg showing thick shell which prevents the enclosed embryo from drying during a drought.

diet of the mother is changed to the green food, she will produce another group of daughters all or nearly all of which will produce male offspring.

In a two-year experiment in which a prolonged and continuous diet of *Polystoma* was used, the rotifers continued producing female offspring exclusively throughout one hundred ninety generations without a single male being

male-producing daughters, but when the scanty green diet is changed to one of great abundance the mother will produce male-producing daughters.

The results show in the grandchildren. The grandmother having either a colorless *Polytoma* or a scanty green *Chlamydomonas* diet has granddaughters, while if the same grandmother is fed an abundance of green food she has

grandsons. Shull has found that this change occurs at the period of maturation in the parthenogenetic eggs which develop into the daughters that later produce the grandsons of the original

males because of its larger size and of the ease of maintaining and caring for it in the laboratory. Nine other species, however, among which is *Brachionus bakeri* (Fig. 3), have been used in diet

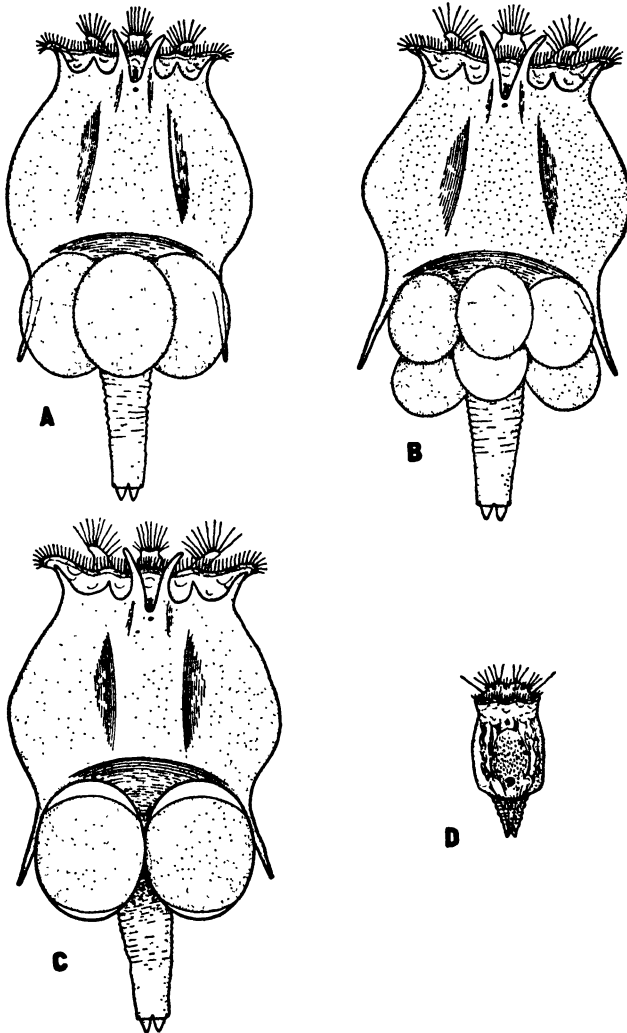


FIG. 3. THE ROTIFER, *BRACHIONUS BAKERI*

- A. Female with attached parthenogenetic female-producing eggs.
- B. Female with attached parthenogenetic male-producing eggs.
- C. Female with attached fertilized eggs. D. Adult male.

female. The nature of this change is unknown.

The rotifer, *Hydratina senta*, has been used extensively in experiments involving the production of females or

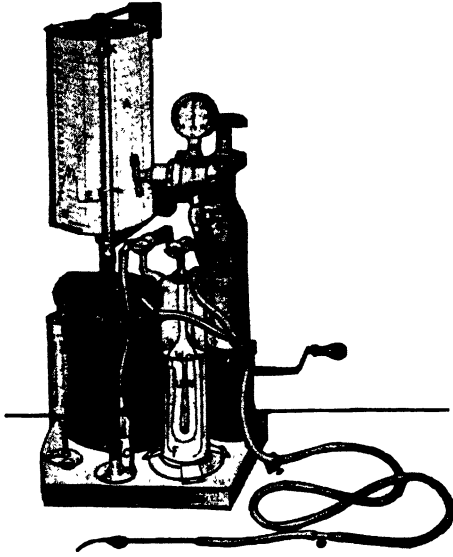
experiments similar to those in which *Hydratina senta* has been used, and the general results have been very similar. A monotonous uniform diet produced parthenogenetic generations of females,

but when the diet was changed or increased a high percentage of males soon appeared.

D. D. W.

RUBIN TEST [TUBAL INSUFFLATION].

Indications.—The method of transuterine tubal insufflation to determine the patency of the fallopian tubes was de-



TUBAL INSUFFLATION APPARATUS WITH UTERINE CANNULA ATTACHED

A. Kymographic Drum. B. Spring Motor. C. Mercury Manometer. D. Float. E. Ink Writing Pen. F. Glass Syphon Meter. G. Stop Cocks. H. Carbon Dioxide Cylinder. I. Reducing Valve, Pressure Gauge. J. Needle Valve. K.K. Blow-Off Valve. U. U-Shaped Tubes for Syphon Meter. W. Water Level.

vised by Isidor Clinton Rubin (*b.* 1883), and is known as the "Rubin Test" (1919). This procedure has replaced exploratory laparotomy as a means of determining the condition of the tubal canals in sterile patients. The most favorable time is from four to seven days after the cessation of a regular flow, a period less likely to interfere with a possibly impregnated ovum.

Contraindications.—The test is contraindicated in the following conditions: (1) inflammation of the genital tract whether in the nature of an endocer-

vicitis, colpitis or salpingitis; (2) during menstruation; (3) in the presence of abnormal bleeding from the genital tract; (4) in patients with serious cardiac, pulmonary, renal or metabolic disease.

Apparatus.—The use of carbon dioxide gas for insufflation has replaced oxygen because of its rapid absorption. The modern apparatus consists of a tank of carbon dioxide gas under pressure, a reducing gauge, a siphon volumeter, a tube connecting the tank through volumeter and manometer to a Keyes-Ultzmann metal cannula, fenestrated at its tip; a rubber "acorn" fitted over the cannula to allow the tip to enter well into the uterine cavity while the acorn itself plugs the external os and prevents premature regurgitation of the gas along the cervical canal, and a kymograph attachment. Figure 1 shows the apparatus employed in our sterility clinic. The noiseless spring motor attached to the kymograph is a valuable addition. When wound it runs for forty-five minutes and its speed is practically uniform, except for the last few minutes. It eliminates any extraneous sound which is especially disturbing in auscultating the abdomen during insufflation and in listening for regurgitation from the cervix. The addition of the kymograph enables one to obtain a permanent and accurate record of the tubal status and to record the tracing of tubal peristalsis. It has made possible the differentiation not only between tubal patency and non-patency, but if patent whether an abnormality is present. Rubin has found the complete occlusion can thus be differentiated from partial or high-grade stenosis as well as from uterotubal spasm.

Evidence of Patency.—Three signs are necessary to prove patency. (1) There must be a drop in pressure within certain limits during the insufflation; (2) the patient must complain of shoulder symptoms; (3) there must be roentgen ray proof of gas in the peritoneal cavity. This may be seen under the diaphragm as a subphrenic pneumo-

peritoneum (fluoroscopy may fail to reveal a small amount of gas).

Technique.—The technique of the operation is simple and according to Rubin is an office procedure requiring only one or two minutes. The author, however, is convinced that the hospital is the best place to perform the test. The following technique is employed:

The cervix, exposed by means of the speculum, is painted with tincture of iodine. If there is any uncertainty regarding the direction of the uterine cavity, it may be determined by passing the sound. The cervix is steadied with tenaculum forceps, grasping its anterior lip. The carbon dioxide, released from the tank and regulated, is now allowed to pass from the water bottle through the glass and rubber connecting tubing to which the metal cannula is attached. By pinching the rubber tubing near the cannula one can make sure that all the joints are air tight. Having made certain of the pressure, the air valves in the manometer are opened and the uterine cannula is introduced to just beyond the internal os, engaging the external os by its rubber acorn. The air valves are now closed. A slow uniform pressure rate of flow within given limits is essential, i.e., twenty to thirty seconds to inject 30 c.c. of carbon dioxide. A more rapid flow may lead to wrong interpretations. Within a few seconds after the carbon dioxide enters the uterine cavity, the pressure as noted in the mercury manometer will rise; within from one-half to three-quarters of a minute in patent cases, the mercury reaches its maximum point. It then fluctuates for a few seconds or drops rather sharply from 10 to 30 points, maintaining the last level more or less for the rest of the time. There may be a slight audible escape of carbon dioxide from the external os in the cases of patent tubes, but as a rule there is none till the cannula is removed, when slight regurgitation is noted.

INTERPRETATION OF TEST

(a) *Pressure Rise of Gas.*—In the positive patent cases, the pressure need not exceed 40 mm. The average pressure is from 60 to 80; occasionally the pressure rises to 100 or more before the gas passes through the uterine ostium of the fallopian tubes. In obstructed or nonpatent cases, the pressure usually rises steadily for three-quarters of a minute to a minute or longer, and does not drop unless the gas regurgitates into the vagina. As the time required for sufficient carbon dioxide to pass into the abdomen where it can be detected by fluoroscopic examination, is one and a half minutes, the cannula is not withdrawn till this time limit is reached. When the pressure reaches 150 or more, it is likely that the tubes are completely closed or stenosed, though not necessarily so in every case. A pressure of 200 is tolerably certain to be due to blocked tubes. If the pressure reaches 200 mm. in one minute, it is wise to open one of the air valves (needle valve) to prevent it from mounting higher.

(b) *Shoulder Pains.*—These arise from the presence of gas under the diaphragm. When the minimum volume of carbon dioxide has been used, that is, from 100 to 150 c.c., the symptoms are negligible. There is usually mild diaphragmatic and rather sharp distress in one or both shoulders. Assumption of the knee chest or recumbent position affords almost instant relief. In general when a fluoroscope is not at hand at least 100 c.c. of carbon dioxide gas should be used and the patient should rise as soon as possible to note whether shoulder pains occur. When, however, a larger quantity of gas has been used, the symptoms may be somewhat more severe. In all cases, the patient should remain recumbent for a few hours after the completion of the test.

Rubin diagnoses nonpalpable tubal adhesions and tubal stenosis by the fact that tubal contractions in the presence of these lesions are completely absent or changed. He claims that the site of tubal obstruction may be localized. In

normal patency there is no complaint of pelvic pain. If a patient complains of unilateral or bilateral pain it may be taken to indicate pressure distention of a portion of the tube proximal to the point of obstruction on one or both sides. Repeated patency tests with the utilization of antispasmodic drugs are most useful in eliminating some of the spastic obstructions.

(c) *Fluoroscopy* is an important aid in the diagnosis of partially stenosed cases, as sometimes the gas will succeed in escaping into the abdomen, though the pressure required to force it in is comparatively high. In the positive cases, that is, when the tubes are patent, a subphrenic pneumoperitoneum will be seen as a clear space below the diaphragm, most often on both sides, but occasionally on one side only. The space varies between one-quarter to one inch in depth. It is unmistakable, and is readily seen when the patient breathes deeply.

Modification of Test.—A number of modifications of the Rubin test have been employed among which may be mentioned, first; a Record syringe varying in capacity from 20 to 150 c.c. and filled with carbon dioxide or oxygen gas, or, second; a rubber bulb with a metal cannula provided with one outflow and with a T-shaped branch to which a manometer is attached. In the latter air is the medium employed.

Iodized Oil Injection.—The roentgen ray examination of the uterus and tubes for abnormalities is facilitated by the use of lipiodol. Heuser (1925) was one of the first to employ iodized oil for gynecological diagnosis. Lipiodol injections, according to Jarcho, are safe and innocuous. In uterosalpingography, a 10 c.c. syringe is filled with the oil and attached to a cannula inserted in the uterine cavity. About 5 c.c. of iodized oil is usually sufficient for a uterosalpinogram. A second roentgenogram taken a day or two later will show iodized oil in the peritoneal cavity. With the use of radiopaque oil one may observe fluoroscopically or record

roentgenographically the filling or the failure to fill one or both fallopian tubes. The oil is absorbed and disappears from the peritoneal cavity in seven to ten days. It disappears from the uterus, by gravity, in one or two days, but when injected into closed tubes may show a shadow for several months. Rubin reports untoward results in nine of 132 patients in whom lipiodol was used. Morhardt also warns against the dangers of this method of study under the headings of chemico-tonic, mechanical and infectious accidents.

Therapeutic Value.—The Rubin test as a therapeutic measure has recently been brought to the fore. Pregnancy may follow insufflation by separating mild agglutinations and straightening tortuous tubes. Rubin employed insufflation as a diagnostic and therapeutic measure in 2,273 cases of sterility, and concluded that tubal insufflation appears to have a definite therapeutic value. This is demonstrated by actual improvement in tubal patency and function during prolonged or repeated insufflation as recorded on the kymograph, and by pregnancy which follows soon thereafter. Of the 398 patients who became gravid after insufflation, 123 or 21.58 per cent had peritubal adhesions or stenosed tubes. In this respect insufflation may be considered as a nonoperative method of salpingolysis. Sixty-seven and fifty-nine one hundredths per cent of the pregnancies took place during the first six months after insufflation, 42.21 per cent within two months, and 27.89 per cent within a month. Insufflation was the only treatment employed in 247 of the 398 patients who became pregnant (62.06 per cent).

I. C. Rubin, *Nonoperative determination of patency of fallopian tubes in sterility* (Journal of the American Medical Association, April 10, 1920); *Nonoperative determination of patency of fallopian tubes, by means of intra-uterine inflation with oxygen and production of an artificial pneumoperitoneum* (ibid., September 4, 1920).

P. B. B.; A. F.

SADE, LOUIS-DONATIEN-FRANÇOIS-ALPHONSE DE (Paris, June 2, 1740; Charenton, December 2, 1814);

Marquis, and after his father's death, Comte; French author, whose surname is eponymic in sexology as *sadism*. De Sade was the descendant of an ancient and noble family, whose founder, Bertrand, in the early 13th century, derived his name from the village Saze, near Avignon in Provence. In the 14th century, Madonna Laura, the wife of Hugues de Sade, was "immortalized in the sweetest ecstasy of Italian song" by Petrarch. In the 18th century, an uncle of the Marquis, Jacques Paul de Sade, vicar-general of the archdioceses of Toulouse and Narbonne, published a very searching and dependable work on Petrarch (1764).

Little is known about the youth of de Sade. In an autobiographical letter in a novel (*Aline et Valecour*), he has given a meager description of his early years: "Born and brought up in the palace of the illustrious prince" (Prince Condé), "a connection of my mother's, of nearly my age, I was encouraged to be with him as much as possible, so that my childhood friend should be useful to me all my life. But my vanity, which at the time did not understand anything of this calculation, took offence one day. . . . I revenged myself by many reiterated blows, without any consideration stopping me; only force and violence could separate me from my adversary. . . . Born in Paris in the midst of luxury and abundance, I believed as soon as I could think that nature and fortune had joined together to cover me with gifts. I believed this because people had been foolish enough to say so to me, and this absurd prejudice made me haughty, despotic and quick to anger; it seemed to me that the whole world should give way to my caprices and that it was only necessary to form them for them to be satisfied. . . . At about this time my father" (Comte de Sade, Chevalier-comte de la Coste et de Mazan, Seigneur de Saumane, Lieutenant-general pour le Roi de la Haute et Basse Bretagne, Bugcy, Valromey et Gex, "a typical grand seigneur, cold, restrained and formal to the highest degree," who had been Ambassador in Russia and London, and "when he died left little behind him except inalienable land and debts") "was engaged in diplomatic negotiations; my mother went with him and I was sent to my grandmother at Languedoc whose too blind kindness encouraged in me all the faults I have mentioned."

Returned to Paris, his education was interrupted by the outbreak of the Seven Years' War (1756-63). "My people, in a hurry for me to serve, did not finish my education and I

joined my regiment at an age when I should naturally have been going to school.

"When our regiment was crushed in the penultimate campaign of that war we were sent to barracks in Normandy; from there my misfortunes began." Back from the slaughter-field, "my father called me to Paris that winter and I hurried to him. . . . I spent two years in different pleasures. . . ."

Meanwhile his family had decided that de Sade should get married and settle down. The bride chosen was Renée-Pelagie Cordier de Montreuil, the eldest daughter of Monsieur de Montreuil, who held a high judgeship in Paris. The affairs of the family Montreuil were managed almost entirely by Madame de Montreuil, usually called *la Presidente*, who "was extremely influential at the Court and she possessed a charm which de Sade averred she must have got from the devil. She had a very strong family pride and excused her most inexcusable actions by pointing to family interests."

When de Sade went to be presented to his future wife he accidentally met first the younger sister, Louise, then thirteen years of age. He fell deeply in love with her and married Renée only under strong protests (May 17, 1763). After a short honeymoon he turned immediately to debauchery and in September of the same year he was arrested for the first time and imprisoned in Vincennes. Although the exact nature of his offense has not been ascertained it seems safe to assume that he was involved in a scandal following an orgy in a lupanar. Thanks to the influence of his family he was released after a short time.

Once at liberty he began to build the foundations for his evil reputation which has followed him into the present time. Again there is little actual material to draw on. It is known that the police of Paris warned the owner of a bordello against him in 1764. His bosom friends were the Duc de Fronsac, man about town and son of the gay Maréchal de Richelieu, and the Prince de Lamballe, whose amatory adventures were known throughout all France. His tastes in female company ran to the lowest prostitutes and servant girls. He

maintained apartments and *petites maisons* in Paris, Versailles and Arcueil.

The first serious Sade scandal took place in Arcueil. It is known as "L'Affaire Keller." It seems that de Sade was solicited by a widow, Rose Keller, in the streets of Paris, that he took her to his house in Arcueil, made her disrobe, then whipped her, applied a certain salve to her wounds and then left her. The woman, frightened, somehow escaped through the window and caused a great commotion in the street. Questioned by the police, she complained that she had been maltreated and cut with a small knife. She was not able to show any wounds or scars two days later at the official inquiry. De Sade, questioned, mockingly declared that he had invented a marvelous ointment which made wounds heal up and disappear within forty-eight hours.

What really happened will probably never be known. Even to-day the medical profession knows of no healing agent with the wonderful effects Rose Keller claimed to have experienced. Her story thus becomes almost unbelievable. But, at the time, the affair caused an enormous scandal. The magistrates of Paris, all under the influence of the chief-judge, de Maupéou, who was a political enemy of de Sade's father-in-law, showed themselves greatly concerned. De Sade himself, in a witty short story, which he published some years later, remarks about this incident:

"Recall to the memory of the judges of Paris . . . that famous adventure of 1769 (sic) when their hearts, far more moved to pity by the whipped bottom of a street-woman than by the people, whose fathers they style themselves and whom nevertheless they let die of hunger, determined them to accuse a young officer who on his return from the sacrifice of the best years of his life in the service of his king found his only laurels in the humiliation prepared for him by the greatest enemies of the country he had been defending."

The consequences of this case were not very serious for de Sade. He was imprisoned, first at Saumur Castle, and then at the Castle Pierre Encize, near Lyons. After six weeks he was released through the influence of his mother-in-

law on condition that he should stay away from Paris and live at the family estate La Coste, not far from Marseilles. Rose Keller received a cash settlement and married a year later.

During the next three years he seems to have lived quietly but in all comfort at La Coste, with his wife and three children. He spent much of his time in studying and began to write plays. He hired a troupe of actors who performed them. At different times he had a dancer, La Beauvoisin, living with him and is said to have introduced her as his wife while his real wife was in Paris. It is a very curious fact and explainable only through deep moral convictions of the duties to her husband that Mme. de Sade never abandoned him throughout the long period of repeated escapades and misfortunes which followed. As many still extant letters prove, she seldom complained and always tried to fulfill the often very bizarre wishes of her wayward spouse.

But life at the castle and *en famille* seems to have been rather boring. The periodic visits of the very energetic Mme. de Montreuil, who must have felt the utmost contempt for her daughter's husband, were the main reason for the discontent of the erratic ex-soldier. Toward the end of this period Mme. de Sade brought her younger sister Louise, whose education in a convent had been completed and who had now reached the age of twenty-one, but she repelled the violent advances of de Sade, who in turn tried to console himself with more or less clandestine affairs with the servants at the castle and repeated trips to Marseilles, always in the company of a trusted valet, a certain La Tour.

In 1772 the second great scandal in the life of de Sade took place, the so-called affair of Marseilles. He intended to amuse himself and ordered his valet to make the necessary arrangements. On this occasion he changed costumes and rôles with his valet whom he addressed as Monsieur le Marquis, while he himself adopted the name of La Fleur. They visited a prostitute, Marguerite Coste,

gave her some cantharidical candy and left when the woman refused his more complicated proposals. She became ill for a few days, but soon recovered completely.

"The same day, probably a little earlier, had taken place another orgy, also arranged by the valet. Three girls were engaged from a bawd, but taken to a newer and more discreet part of the town, as the brothel was too public. There they were received one after the other by the Marquis and his valet and slightly beaten by him. They were then asked to beat him in turn, and he took out of his pocket a whip made of parchment studded with big and little nails and covered with bloodstains. This was more than the girls could stand—soft-hearted and simple as most whores—so he had a twig broom sent for, and received from the three girls and from his valet no less than eight hundred strokes, if the score he kept on the wall was not an exaggeration. He also bedded with the girls and his valet, treating the girls as his valet treated him, which so 'suffocated' the onlookers that they burst into tears. He also gave the girls some of the sweetmeats; one ate them, the others threw them away. The girl that ate them was also sick, though much less so than Marguerite Coste" (Gorer).

Again, there were complaints to the police and about a week later de Sade and his valet were being searched for. They were later indicted and condemned to death for poisoning and sodomy. Both sentences were pronounced *in contumaciam*, since neither de Sade nor La Tour could be located. Some years later, through the influence of Madame la Presidente, the case was reopened and it was proved that the accusations had no basis in fact. None of the girls had died and an analysis of the candy, a few pieces of which had been preserved by the authorities, showed that they contained no harmful ingredients. The death sentence was revoked and de Sade resented to a fine of fifty francs. In this case as in the Keller affair it seems to have been the political influence of the same Monsieur de Maupéou which was mainly responsible for the persecution of de Sade for his alleged crime.

Monsieur de Maupéou had considerable influence upon the Parliament at Aix where the case came to trial. He was a sworn enemy of de Sade's father-

in-law and apparently a bitter and cruel puritan. De Sade later wrote about this affair in *Les Crimes de l'Amour*:

"In 1772 a young nobleman of the province wanted in playful revenge to whip a courtesan who had made him a bad present; this joke was treated as criminal affair, as murder and poisoning, and this judge won all his colleagues over to this ridiculous opinion, destroyed the young man and had him condemned to death by contumacy, since they could not get hold of his person."

This is the only account of the case by one of the accused; all other versions have come from either hostile witnesses or writers who based their stories upon hearsay.

Apparently quite ignorant of the dire consequences of his visit to Marseilles, de Sade hurried to his castle, learning on the way of the proceedings against him. He stopped just long enough to pack a few pieces of luggage and departed for Italy, in the company of the now willing Louise. Here they lived together for a few months, after which they separated under unknown circumstances. The fate of Louise remains in obscurity; she probably died in Italy shortly after this escapade. De Sade was arrested by order of the King of Sardinia, after a complaint lodged against him by the French Ambassador. He was incarcerated in Chambery in Savoy, then a part of the Kingdom of Sardinia. He escaped after five months. His imprisonment was the result of the machinations of his mother-in-law who was furious over his escape with Louise. He travelled on to Rome where he had the misfortune to be mistaken for an absconding banker and, when arrested, encountered great difficulties in liberating himself, since he did not dare to reveal his real identity.

About this time he also passed through Geneva where he visited Rousseau, who encouraged de Sade to devote himself entirely to literature and philosophy. "He taught me to separate true virtue from the detestable systems under which it smothered." De Sade's father and Louis XV died at about the same time; the death of the king made it possible

for him to return to his native land to take over his heritage since the *lettre de cachet* against him had lost its power. The castle La Coste was now made over into a real fortress, access to which was possible only over a drawbridge. Mme. de Sade brought three young people with her when she returned from an extended trip, two young girls and also a secretary for her husband. During the winter 1774-75 the castle was closed to all visitors. In the spring the parents of the young visitors demanded the immediate return of their children. One of the chambermaids became pregnant and to avoid gossip Mme. de Sade had her arrested on a trumped up charge.

At about this time de Sade began to write down observations about his sexual experiences. Most of these papers seem to have been confiscated by his mother-in-law; de Sade never recovered them. In the following years the fortunes of the family sank constantly; there were times when de Sade and his wife did not have enough to eat. There were also new experiments in the rather mild form of sadism to which de Sade was addicted—mild in comparison with the often gruesome cruelties described in some of his books. There were more suppressed scandals with young boys and girls (the father of one of them shot at the Marquis but missed), there were more affairs with servant girls at the castle, flights from the police who came to search the house, escapes from the constabulary. Many of these affairs were hushed up through the intervention of the wife, while his mother-in-law constantly tried to have him imprisoned. She finally succeeded; when de Sade arrived in Paris in February, 1777, in the company of his wife, he was arrested.

In *Historiettes*, *Contes et Fabliaux*, he describes the incident:

"A gentleman, who had a case against him at the Parliament of Aix . . . who had been in hiding for several years, carried away by the imbecile delicacy of wanting to care for his dying mother, came to Paris in spite of the danger. Hardly was he in the dead woman's room than his wife's family had him arrested. He complained of this procedure . . . but they laughed in his face and threw

him into a dungeon of the Bastille, where, amusingly enough, he could weep at the same time for the loss of his liberty, the death of his mother and the barbarous stupidity of his relations."

After he had spent over a year in the prison of Vincennes the case against him, arising from the affair of Marseilles, was quashed. But he was kept in jail nevertheless, by means of a new *lettre de cachet*, applied for and obtained by his mother-in-law.

Until 1784 he was kept in Vincennes under the most severe conditions. His cell was cold and damp, his food was handed to him through a little hole in the door. Books, papers and writing materials were refused him and he was allowed to send only one letter each week. His wife was permitted to see him at long intervals only, and then the practice was discontinued entirely. Despite all these obstacles he succeeded in working out plans for the writing of his books and actually wrote a short dialogue on a religious subject and a plan for a comedy.

Early in 1784 he was transferred to the Bastille; his cell was located in the "Tower of Liberty". It was in the Bastille that de Sade wrote most of the books which have come down to our times; of many others we merely have the titles and some incomplete descriptions. These were mostly plays.

In 1789 he tried unsuccessfully to escape from the Bastille. It is said that he foresaw the revolution and that he incited the mob by scattering notes from his window, even shouting to the populace through an improvised megaphone, telling them that all prisoners were being killed. He was transferred to the asylum at Charenton on the third day of July, 1789. When eleven days later the Bastille was stormed, most of his papers were lost.

It was in March, 1790, that de Sade was a free man again. An individualist all his life, he now became a supporter of the revolutionary party. He was given a post as secretary in the Vendôme district. But he was quickly disillusioned. Not only his own tempera-

ment but also the rule of the pedantic and puritanical Robespierre naturally made it impossible for him—a mental anarchist if ever there was one—to remain contented. He gave up his position and devoted all his time to his writings. He seems to have been indefatigable. While he always found publishers, he was in constant need of money. His letters to the administrator of his estates, a certain Monsieur Gaufridy, are filled with demands for money. In 1796 he was forced to sell La Coste; his wife retired to a convent in the following year. Legal and financial entanglements followed, the Marquis was on the brink of ruin, the administrator could not furnish the required assistance. Since his release from prison he had been living with a certain Mme. Quesnet whom he introduced as the wife of a salesman travelling in America, and described by others as a Parisian soubrette.

Meanwhile he showered a constant stream of books upon the public, books which not only attacked every belief held sacred by the common man but which were also written in most profane and obscene language. The authorities considered him a nuisance. But his history would have taken an entirely different turn, and a turn for the worse, perhaps, had he not undertaken to attack the wife of the First Consul and the loose company she was keeping. This he did in his otherwise least interesting booklet, *Zoloé et ses deux acolytes* (1800). Napoleon and his wife, Josephine, Mme. Tallien and other public figures appear therein under the thin disguise of easily recognizable anagrams—D'Orsee for Corse, for instance—and behave in a rather strange and insane fashion. There are one or two scenes of a typically offensive character, though de Sade seems to have taken special pains not to use any obscene words.

Napoleon was enraged. Upon his personal order the police prefect Dubois instituted a raid upon de Sade's publisher, Massé, when the Marquis himself happened to be present. A great quantity of books and manuscripts by de

Sade were discovered, the latter all in his own handwriting, as the police report of the affair, dated 15. Ventose, An neuf, emphasizes. Among the seized manuscripts was that of *Juliette*, a counterpart of *Justine*. Both had been published a few years earlier, but de Sade just at that time had made it a special point to deny his authorship in the newspapers. It is a curious fact that de Sade denied the authorship of many of his books almost to his deathbed; but recently discovered letters to his administrator show that this was merely one of his poses.

More manuscripts were discovered in his apartment in St. Quen, where de Sade lived with Mme. Quesnet. There were also found sixteen packing boxes containing principally obscene goblin tapestries illustrating *Justine* and a number of sculptures of the same genre. The report of the police sealed his fate; de Sade was confined in the insane asylum at Charenton where he lived in comparative freedom for thirteen more years. His arrest undoubtedly saved him from a more cruel fate; it is known that at the time he was practically *sans le sou*, that his shoes and clothing were torn and in tatters, and that all his furniture had been pawned.

At Charenton he seems to have been quite a celebrity and was treated accordingly. During his freedom he had been unable to control his sexual appetites which, when he was in prison, canalised themselves by means of his eccentric and enraged mind into the most extraordinary, gruesome word-pictures. These desires of the oversexed man now, at Charenton, took possession of his stomach; he became a fastidious gourmand and, consequently, grew so enormously obese that he could hardly move. He was allowed to go about freely and was put in charge of the theatrical performances of the institution, for which task he had some qualifications. He is described as using most offensively obscene language with an engaging, charming smile on his lips; fashionable aristocrats from Paris often came to visit him.

When he died, in 1814, there was found a peculiar testament in which he forbade that his coffin should ever be opened or an autopsy performed on his body. But even in this last wish he was unsuccessful; phrenology being the rage of the day, two "experts" of this new "science" came into possession of his head. They found that the cavities and elevations on his cranium showed "motherly tenderness and great love for children."

De Sade's books are interesting from two viewpoints; that of the philosopher and that of the medical man. His philosophical ideas are forerunners of those of Nietzsche and Stirner; they idealize individualism to the extreme point of egoism, treating with sarcastic realism and contempt the beliefs of the common, self-deceiving man. A number of his most interesting ideas were published under the appropriate title, *Pages curieuses du Marquis de Sade* (Paris, 1927).

The medical man and the sexological historian will be most interested in his *Les 120 Journées de Sodome*. The manuscript of this sexual psychopathological study in the form of a novel was found in his cell after his death and remained in private hands for almost a hundred years; it was written on thirteen yards of packing paper in almost microscopical letters. In it he undertakes to describe systematically all forms of sexual diversions and perversions, gradually accentuating the possibilities until he gains the realms of most fantastic, imaginary gruesomeness.

While de Sade's all too realistic way of thinking will for a long time to come be entirely too cruel and uncompromising for the average man, his observations upon sexual behavior in all forms are a valuable addition to the scientific knowledge in this field. His life was as extreme and extraordinary as are his books: the result of uncontrollable circumstances and uncontrollable organic conditions. The titles of his principal books follow: *Les 120 Journées de Sodome, ou L'Ecole du Libertinage*,

written in 1785, first published by Eugen Dühren (Iwan Bloch) in French, and later in German (1904); *Justine, ou les Malheurs de la Vertu* (2 vols., 1791); *Juliette, ou les Prosperités du Vice* (6 vols., 1796-97); *La Nouvelle Justine* (4 vols., 1797); *Aline et Valcour, ou le Roman philosophique* (4 vols., 1782); *La Philosophie dans le Boudoir* (2 vols., 1795); *Oxtiern, ou le Malheur du Libertinage*, a play (first acted in 1791 and first published 1801); *Dialogue entre un prêtre et un moribond* (written 1782, published 1926); *Zoloé et ses deux acolytes, ou quelques decades de la Vie de trois jolies Femmes* (1800); *Contes et Fabliaux d'un Troubadour Provençal du XVIIIème Siècle*. Fifty stories written before 1789. Eleven were published under the title *Les Crimes de l'Amour* (1800), another by Anatole France (1881) and twenty-five were edited by Maurice Heine and published (1927) under the title *Historiettes, Contes et Fabliaux; Idée sur les Romans*, first published as preface to *Les Crimes de l'Amour* (1800).

Geoffrey Gorer, *The Marquis de Sade*, a short account of his life and work, with foreword by J. B. S. Haldane (1934); Octave Belliard, *Marquis de Sade* (Paris, 1927); Montague Summers, *The Marquis de Sade, A Study in Algolagnia* (1920); Eugen Dühren (Iwan Bloch) *Der Marquis de Sade und seine Zeit* (1901); Guillaume Apollinaire, *L'Oeuvre du Marquis de Sade* (Paris, 1909); C. R. Dawes, *The Marquis de Sade* (1927); Paul Bourdin (ed.), *Correspondance inédite du Marquis de Sade* (Paris, 1929); Paul Lacroix, *Curiosités de l'Histoire de France* (Paris, 1858).

E. Se.

SAND, GEORGE. AMANDINE LUCILE AURORE DUDEVANT, née DUPIN (1804-1876), French author. She was brought up conventionally enough by a grandmother who observed and insisted upon all the precepts of decorum and morality then accepted in French middle class circles; but the instinct of revolt against such restrictions and inhibitions was in her blood. Her mother was a grisette who had been the mistress of a general before eloping with her father, who was a subaltern, and she numbered among her ancestors Augustus the

Strong, of Saxony, who was said—but that may have been an exaggeration—to have had as many children as there were days in the year; the courtesan, Aurora von Königsmarck; Marshal Saxe, the lover of Adrienne Lecouvreur; and Marie de Verrières, the mistress not only of Maurice de Saxe but also of Marmontel, La Harpe, and the Duc de Bouillon.

Religion was then fashionable in France, so she was sent to a convent school where, being an emotional child, she alternately expressed a desire to take the veil and to go on the stage. Her confessor, however, discouraged the former ambition, for which she seemed to him to have no vocation, and her grandmother disapproved on social grounds of the latter, so that neither of them was realized; but her religious training, though it never influenced her conduct, was to have a permanent effect on her prose style, making those attacks on the moral conventions for which she is famous almost devotional in tone.

Finding life with her mother difficult, she made haste to marry; but marriage did not mend matters. She bore her husband, Casimir Dudevant, two children—Maurice and Solange—but she soon tired of him, not unnaturally, seeing that he shared none of her literary and artistic interests, frequently got drunk, and made love to the servant maids in her country house at Nohant.

A Platonic friendship with Aurélien de Sèze, Advocate-General at Bordeaux, gave her some relief, but not full satisfaction—perhaps because he was a little afraid, as a man who could not afford to compromise himself, of a lady who announced that “the proprieties are the guiding principle of people without soul and virtue.” At all events that friendship came to an end; and when, in the course of one of their quarrels, her husband boxed her ears, she made up her mind to leave him and “live her own life” in Paris.

Possibly she had had lovers, as well as a Platonic friend, before she left Nohant. Gossip credited her with four,

and she admitted in after years, that four lovers “would not have been too many for anyone with such lively passions as mine”; but the allegation does not seem to be well founded. According to her own account—and there really is no reason to doubt her word—it was not until after she had been living some months in Paris that she set up her first “faux ménage”—“lived in my apartment in an unconventional style” is her way of putting it—and entered upon the career which she was to boast of in later life as that of “une grande amoureuse.”

Jules Sandeau, then a student in the Latin Quarter but destined to fame as a novelist, was her first lover. He was a boy of twenty whom she had known at Nohant. She “resisted him for six months” but then yielded, and one observes in this first affair all the salient characteristics of all her amours. She “mothered” Jules Sandeau, as she was to “mother” many lovers, providing him with pocket money and expressing alarm at the exhausting ardor of his passions, and she had a friend and confessor to whom she confided all her emotions and anxieties, exclaiming in her jubilation: “To live! It is intoxicating! To love and to be loved! It is happiness! It is heaven!”

The intoxication, however, did not last. She and Sandeau collaborated in a novel which they signed “Jules Sand”; but then he was unfaithful. It was only a single act of infidelity discovered by accident, but she dismissed him in disgrace, and he passed out of her life so completely that, when they met at a party, long afterwards, each of them had to enquire who the other was. His successor in her arms—one can hardly say in her affections—was Prosper Mérimée; but they did not suit each other, and that intimacy lasted only a week. Then she met Alfred de Musset—though she told Sainte-Beuve that she would have preferred to meet Dumas—and so inaugurated a romance about which many books have been written and much controversy has raged.

She was as anxious to "mother" Musset as she had been to "mother" Jules Sandeau. She told his mother so, "assuring me," as Mme de Musset afterwards wrote, "that she would love him like a mother, and would take better care of him than I should myself," and it was consequently with Mme. de Musset's consent, if not her active approval, that she carried him off for a honeymoon at Venice. But she did not—perhaps could not—keep her promise. The harmony of the union was menaced from the outset by Musset's incurable addiction to drink. He sat in the cafés while George Sand was grinding out copy for Buloz of the *Revue des Deux Mondes*. He came home drunk, he fell ill, and a careful study of the symptoms recorded makes it quite evident that his illness was delirium tremens.

An Italian physician—Dr. Pagello—was called in to treat him, and George Sand found that she preferred him to his patient, told Musset so, and dismissed him as she had dismissed Sandeau. He left her, and returned to Paris, and Pagello shared her apartment for a season. But they jarred upon each other because their interests in life were different. The claims of literature drew her. The claims of medicine drew him. He accompanied her to Paris, but felt uncomfortable there—out of his element in the company of the wits, who, as he soon realized, regarded him as a comic figure. So they agreed to part. She went to Nohant to see her children. He returned to Venice to try to recover his practice, and, thanks to his studies in the Paris hospitals, became an expert in lithotripsy.

Then George Sand tried to recover Musset. She beckoned him back, and he came, but he did not stay very long. He was, in fact, already making other arrangements, so that the renewal of love soon led to a renewal of quarrels, and they too agreed to part, and also agreed that their love letters should not be destroyed. Then followed an interlude during which love was interrupted

by litigation. George Sand's relations with her husband, with whom she had corresponded amicably after leaving him, had become embittered, and she decided to apply to the Court for a decree of judicial separation.

She was advised that, if she wanted to win her case, she must be careful that her conduct gave her husband no grounds for complaint, and she took the advice, living as the guest of the wife of a provincial lawyer, refusing to see any of her men friends for fear lest one or other of them should be supposed to be a lover. "Four thousand fools," she wrote, "imagine that I am on my knees, in sackcloth and ashes, weeping for my sins like the Magdalen, but their awakening will be terrible. On the morrow of my victory I shall throw away my crutches and gallop round the town on horse-back."

What she actually did on the morrow of her victory was to become the mistress of her advocate, Michel de Bourges; and that was a new type of love affair for her. Michel was not a man of sensibility who wanted mothering, but a strong man who wanted to indoctrinate his mistress. To a certain extent it seems that he did indoctrinate her. She ceased, under his influence, to write novels in which she called upon God to sanctify illicit love as the fulfilment of the divine will revealed in the human heart. She became, instead, a Republican, and a Socialist. But when Michel took to locking her up in her room to meditate at leisure on his admonitions, while he went about his business, she asserted herself and broke with him, and even toyed with the idea, though she finally rejected it, of acceding to the request of the Saint-Simoniens that she should become the high priestess of their Order.

Possibly she had an affair at this time with Abbé Lamennais on whose advice she declined the proposal, and to whom she wrote: "You have lived among angels. I have lived among men and women. I know all about suffering, and I know all about sin." But that is un-

certain, and it is also uncertain whether she had, as was rumored, a liaison with Liszt. Her next acknowledged lover was her son's tutor, Félicien Mallefille, a mere boy at that time, but eventually French Minister at Lisbon; and then came Pierre Leroux, with whom she started the *Revue Indépendante*; and then came Chopin.

That was the last affair of which we know anything. Very likely it is the last of which there is anything to be known, for though George Sand lived to be over seventy, her amorous life, so far as the records go, came to an end when she was about forty-five. Moreover this last liaison, though it lasted longer than any of the others, seems to have been less passionate than most of them—perhaps because it gave fuller scope to her maternal instincts.

The other lovers to whom she had sought to act as mother as well as mistress had not always wanted mothering very badly. Chopin, as an invalid, really needed it, and was very grateful to her for looking after him, first in Majorca, and afterwards at Nohant, though her statement that her love for him was "absolutely chaste and maternal," and that she had consequently suffered "martyrdom" cannot be accepted without qualification. His death, however, from phthisis soon followed their quarrel and separation. She lived until 1876 and then died of appendicitis.

It would be an exaggeration to call her a great writer. Her theses are not "embalmed in style," and are not quite original. Mme. de Staël, Rousseau, and even Abbé Prévost in *Manon Lescaut*, had anticipated her in expounding most of them. But she differed from them in being a fighter, and it is by no means true that, as one of her English biographers declares, "the alleged hostility of her romances to marriage resumes itself into a declared hostility to the conventional French system of match-making."

That inference might perhaps be drawn from some of her later novels, written when she was less concerned to

proclaim what she conceived to be the truth than to earn her living by "making copy for Buloz." Her earlier novels do not warrant it. In them she not only insisted that love was a divine instinct and the act of loving a virtue but openly demanded the sentimental emancipation of her sex, insisting that women as well as men should be freed from the tyranny of convention and prescription, and that, for them as well as for men, love should be the only law-giver and the only sanction required for any union whether legal or illicit.

In that she was, of course, the *porte-parole* of the Saint-Simonians, and she preached their and her central doctrine with a fervor and unction derived, no doubt, from her religious education, which provoked a cynic to remark that "in George Sand, when a woman wants to change her lover, God is always there to facilitate the transfer." Here are three passages from her writings which may serve to summarise her point of view:

"The immense superiority of this sentiment above all others—the proof of its Divine origin—is that it does not originate as an act of human will, and that man, unaided, is powerless to direct it. He cannot bestow it, and he cannot recall it, by an act of volition; but the human heart receives it from on high, no doubt for the purpose of conferring it upon the creature chosen for him by the designs of Providence; and when a soul of strength and energy has received it, it is in vain that human considerations raise their voices for its destruction. Its existence is self-sufficient and independent."

"I have never teased my imagination either to kindle in my breast the sentiment which I could not find there or to revive the sentiment which had become extinct. Nor have I ever imposed constancy upon myself as a duty. When I have felt my love failing, I have admitted the fact without shame, and without remorse, and have obeyed the Providence which attracted me elsewhere."

"Oh, my dear Octave, we will never pass the night together without first kneeling down and praying for Jacques." F. G.

SANGER, WILLIAM WALLACE (August 10, 1819—May 8, 1872), American physician and historian of prostitution, was born in Connecticut. He began the study of medicine at Wheel-

ing, Virginia, but soon after settled in New York and entered the College of Physicians and Surgeons, Columbia University, from which he was graduated M.D. (1846). He was appointed Assistant at Bellevue Hospital, later becoming the first Resident Physician at Blackwell's Island (N. Y.), a post that he resigned to visit Europe for purposes of pleasure and study. Upon his return, in 1853, he was immediately reappointed to his former position. In his medical capacity at Blackwell's Island, Sanger had an ideal opportunity to investigate the subject of prostitution, in which he had become interested while travelling in Europe. In 1860, he again resigned in order to devote himself to private practice. After a long and painful illness, he died at his office and residence, 45 East 10th Street. There is an oil painting of him (1865) in the Museum Room of the New York Academy of Medicine.

Sanger's reputation rests entirely on his only work, *The History of Prostitution, Its Extent, Causes, and Effects Throughout the World*, a volume of 685 pages, begun in 1856 and published, in the fall of 1858, by Harper and Brothers. In 37 chapters, Sanger treats of prostitution in Egypt and Syria, Greece, Rome, France (5 chapters), Italy, Spain, Portugal, Algeria, Belgium, Germany (3 chapters), Denmark, Switzerland, Russia, Sweden and Norway, England (4 chapters), Mexico, and New York (6 chapters). Smaller national and racial groups are treated in single chapters devoted to the Jews, Central and South America, North American Indians, Barbarous Nations (Africa, Australasia, Polynesia, West Indies, Java, Sumatra, and Borneo), and Semi-Civilized Nations (Persia, Afghanistan, India, Ceylon, China, Japan, and Turkey).

Sanger's work is, as the explanatory sub-title indicates, an "Official Report to the Board of Alms-House Governors of the City of New York." It was undertaken at the request of the Governors, and was supported by, and is dedicated

to, them. This official interest, as well as the author's position, explains the fact that one-third (226 pages) of the book is given up to a very detailed investigation of all phases of prostitution in New York. Both for New York and for the European countries discussed, Sanger's *History* is still a standard, reliable, and trustworthy source of information. His statistics, of course, now have only an historic interest, but permanent value attaches to his views on the character and the psychology of the prostitute. In discussing causes, he recognizes fully the importance of the economic factor. Unlike many later works covering the same field, Sanger's volume is almost wholly free from moral reflections of any kind. H. S. R.

SATYR. In classic mythology, the satyrs were the companions of Bacchus. As first represented, they had long, pointed ears, a goat's tail, and small horn-like knobs behind their ears; goat's legs were a later attribute. This mythic being, half man and half beast, came to typify an animal lust. Sylvan satyrs are to be heard of as far back as Hesiod's time; but that writer affords us no physical description of them. According to Gerhard (in his *Del Dio Fauno*, Naples, 1825), satyrs were differentiated from Pan and the Fauns by their lack of horns. Prominent among the satyrs were Silenus and Tityrus. The name was also applied to a variety of tailed ape, supposedly of satyr-like appearance (Pliny vii, 2, 2, and elsewhere). Lucretius (iv, 582) speaks of the *capripedes Satyros*, or goat-footed Satyrs. See, also: Horace, *Odes*, ii, xix, 4; Ovid, *Metamorphoses*, i, 193 and 692; Cicero, *De natura deorum*, iii, 17, and numerous other passages. Cicero (*De divinatione*) speaks of a *Satyriscus*, or "little satyr"; and in Athenaeus and the *Anthology*, we find the feminine form, *satyra*.

The satyr gave his name to a dramatic form, *satyros* or the *drama satyricon*, which, constituting the fourth piece of a tragic tetralogy, is said to have been the invention of Pratinas, the only extant example of any length being the *Cyclops* of Euripides. The fragments of the

Satyrographi, or writers of Satyric dramas, were published by Friebe, at Berlin, in 1837. Horace, in the *Ars Poetica*, 235, alludes to a *Satyrorum scriptor*. From this, it might hastily be assumed that the satyr and the dramatic *satyros* represent the origin of our word and literary form, satire; but the assumption would be an erroneous one. Our word, satire, is derived from the Latin *satura*, a dish filled with various kinds of fruit, hence, a mixture, a medley, which in turn comes from *satis*, enough. It was through a misspelling of *satura*, as *satira*, and a false association with the Greek *satyros*, that the error arose. As a matter of fact, the Roman *satura*, an established form from Ennius down, is wholly different from the *drama satyricon*. One word the satyr did present us with, however, and it has passed into common use: *satyriasis*.

SATYRION, a plant believed to provoke sexual desire; the name is derived from the Satyrs, the lustful sylvan deities typifying the luxuriant forces of Nature. The satyrion is a species of Orchis (the Greek word for testicle) named from its testicle-shaped tubers.

The principal writers of the first century A.D. are familiar with the reputation of satyrion as an aphrodisiac. According to the father of materia medica, Dioscorides, "A man should use satyrion if he intends to lie with a woman, for it is said to stir up courage in copulation" (iii, 143). The arbiter of elegance, Petronius, thus alludes to the properties of the plant: "We saw in the chambers persons of both sexes behaving in such a fashion I concluded they must every one have been drinking satyrion. On seeing us, they endeavored, with enticing gestures, to allure us to sodomy" (*The Satyricon*, ch. viii). Pliny, in his chapter on satyrion, states: "The root, we are told, if only held in the hand, acts as a powerful aphrodisiac, and even more so, if it is taken in rough, astringent wine. It is administered in drink, they say, to rams and he-goats when inactive and sluggish; and the people of Surmatia are in the habit of giving it to their stallions when fatigued with covering" (*Natural History*, xxvi, 63).

In the seventh century, Paulus Aegineta calls satyrion "a provocative to venery" (vii, sect. 3), and its reputation as an aphrodisiac survived through-

out medievalism. There was no foundation for this belief which, under the influence of the ancient *doctrine of signatures*, arose because of the testicular shape of the tubers.

SCARLET LETTER, THE (1850), a novel, by Nathaniel Hawthorne (1804-1864), American novelist, born at Salem, Massachusetts. The setting is Boston; the time, the seventeenth century. The theme is a favorite one with Hawthorne: sin and its punishment; in this case, the sin is adultery. It is worked out with keen psychological insight as it affects the four leading characters in the story: Roger Chillingworth, his wife, Hester Prynne, her lover, the Reverend Arthur Dimmesdale, and the child of their union, Pearl. As a moralist, Hawthorne is concerned not with the sin itself, which takes place long before the story opens, but with its consequences. It is in this concern, rather than in any condemnation of the act, that his Puritan training is revealed. Hester suffers least because she has acknowledged her sin, and because she really loves Dimmesdale. The minister is represented as suffering because he allows Hester to shoulder all the responsibility for a deed in which he has shared. Only when he finds the courage publicly to announce that he was Hester's partner does he find peace.

Apart from its undisputed merit as Hawthorne's masterpiece—by many critics it is regarded as the great American novel—the story is of interest to students of sexual ethics, not merely because it is concerned with adultery, but because we have a Puritan moralist—who has been accused of not being an artist—treating sin without condemnation. It is the secrecy, the lack of courage to stand by Hester's side, that tortures Dimmesdale. Equally significant, if not more so, is the fact that the greatest sufferer of all, is Chillingworth, the "injured" husband. Hester's love enables her to triumph over scorn and disaster, and Dimmesdale finally redeems himself, but Chillingworth, transformed by rage and jealousy, becomes

a fiendish character, punishing himself more than his unhappy victim. For him, the author has no sympathy, and his censure, we feel, is for Dimmesdale's failure to support Hester, not for his yielding to temptation.

It is obvious that the theme of the minister who forgets his vows and remembers his manhood offers a rich field for the dramatist and the novelist, and neither has neglected it. Hawthorne is by no means the first to attack the problem, although his presentation of the erring minister is probably the best known. In *A Simple Story* (1791), by Mrs. Elizabeth Inchbald, we have Dorri-forth (later Lord Elmwood), a priest who leaves the church in order that he may marry. John Gibson Lockhart has anticipated Hawthorne in almost every detail in *Some Passages in the Life of Adam Blair* (1822), the story of a Scottish minister. In Serge Mouret, in *Abbé Mouret's Transgression* (1875), by Émile Zola, and in Abbé Daniel, in *The Duel* (1905), by Henri Lavedan, we have two examples of the French viewpoint. For the English dramatist, Henry Arthur Jones, the theme seems to have had a very strong appeal, as he has dealt with it in the characters of the Reverend Richard Capel in *A Clerical Error* (1879), Mr. Jorgan in *The Triumph of the Philistines* (1885), and the Reverend Michael Feversham in *Michael and His Lost Angel* (1896). Johannes Rosmer, in *Rosmersholm* (1886), by Henrik Ibsen, is another example of an idealistic character struggling between religion and passion. Father Oliver, in *The Lake* (1905), by George Moore, goes through the same struggle. In *The Garden of Allah* (1904), his one masterpiece, Robert Hichens created a powerful character in Boris Androvsky, a monk, who pays, by self-inflicted torture, for the brief happiness that he has stolen.

H. S. R.

SCORTATIO. A patristic word (classic Latin *scortum*, whore, *scortator*, whoremaster), with the general sense of *whoring*.

The *Apostolic Constitutions* (vii, 27) afford one definition: "*Scortatio* is the corruption of one's own body, which does not look to the procreation of children, but has no other object than pleasure, this being an indication of incontinence and not a mark of virtue."

SCORTUM. Classic Latin term for *whore*. The original meaning of the word was a *skin* or *hide*: "*pellem antiqui dicebant scortum*," says Varro, *De lingua latina*, vii, 5, 96. (A lone post-classical example of this use will be found in Tertullian, *Pall.*, 4 middle.) In the sense of a harlot, on the other hand, the word is quite common in classical authors. The sixth-century grammarian, Sextus Pompeius Festus, gives an explanation of the transference of meaning: *scorta appellantur meretrices, quia ut pelliculae subiguntur* ("prostitutes are called *scorta*, for the reason that they are dressed down like hides"). Any number of other examples of the word's employment might be cited. Plautus applies it to a male prostitute, in the *Curculio*, iv, 1, 12; and cf. the *Poenulus*, Prologue, 17; *scortum exoletum ne quis* (note the masculine pronoun) in *proscenio Sedeat* ("and let no man-sized whore take his seat in the proscenium").

There were various types of *scorta*. The *devium scortum* (literally, "off the highway"; Horace, *Odes*, ii, 11, 21) lived a "retired" life, i.e., lived at home. The *erratica scorta* made up the army of vagabond prostitutes, of exceedingly irregular life.

SERAPIS (Preferred Greek spelling: *Sarapis*). An Egyptian god, symbol of the Nile and of fertility, later an infernal deity. He is sometimes identified with Osiris. He was subsequently worshipped in Greece and at Rome.

Varro, *De lingua latina*, v, 10, 17; St. Augustine, *De civitate Dei*, xviii, 5; Cicero, *De divinatione*, ii, 59, 123, and *De natura deorum*, iii, 19; Pliny, xxxvii, 5, 19. The most celebrated temple of Serapis was at Alexandria; we find a mention of this in Tertullian, *Apol.*, 18, end; it is also mentioned by Tacitus, *Historia*, iv, 84, and other writers. The adjective, *Serapious*, came to mean "splendid," or "sumptuous"; thus, we hear Tertullian applying it (*Apol.*, 39, middle) to banquets. As the god of fertility, Serapis naturally had more or less of an erotic significance.

SERPENT'S EGG. An oval-shaped stone fossil, white or brown in color, the discovery and possession of which was believed by the ancient Gauls to bring prolific sexual powers and, in general, happiness. The serpent, of a distinct phallic significance, played a considerable rôle in the Druidic religion, and especially in connection with the rites of the goddess, Onouava.

SEXUAL HEART. Picturesque, yet accurate, name for the musculo-glandular prostata or prostate in the rectum.

SHAKERS, an ascetic, communistic society founded in the eighteenth century and still in existence, which combines curious doctrines and practises in matters of religion, economics and sex. It is also known as the United Society of Believers in The Second Coming of Christ, the Alethian Society, and the Shaking Quakers. It was the outgrowth of an evangelical movement in England which centered in the religious beliefs of the so-called French Prophets, or Camisards. This movement took hold in the working population of Manchester, England, and resulted in the formation of a small group under the leadership of James and Ann Wardley.

The real founder of the Shakers, however, was Ann Lee or Lees, who was born in Manchester on Feb. 29, 1736. She was the daughter of a blacksmith and spent her early life working in a cotton factory, as a cook at the Manchester Infirmary, and as a cutter of hatters' fur. In 1758, when she was twenty-two years of age, she joined the small group which met with the Wardleys. The principal activities of the society at this time were the open confession of sins and the interpretation of prophecies concerning the second coming of Christ. On January 5, 1762, at the age of 26, she married Abraham Standerin, a blacksmith like her father. He is always referred to in Shaker history as Standley or Stanley. According to the Shaker apologists also, Ann Lee had always regarded marriage with

loathing and was forced into the marriage with Stanley by her parents.

A more plausible explanation of her subsequent attitude toward marriage would seem to be the fact that she had four children within the succeeding six years, all of whom died in infancy. In 1770 she was imprisoned for "profanation of the Sabbath," and during this or some other imprisonment at the time, she received an "illumination" on two matters which were to become fundamental doctrines of the Shakers. It was "revealed" to her first that the essence of all sin is sexual intercourse and that marriage is to be regarded with extreme repugnance. In the second place, she herself was the second appearance of Christ, the prophecies of which the Wardley group had been studying with intense interest. When she was released from prison she was able to persuade the other members of the group that her "vision" was authentic, and from this time on she was called Ann the Word, or more commonly, Mother Ann. In 1774 a vision directed her to go to America, and she, her husband, her brother William, her niece Nancy Lee, John Hocknell, the propertied member of the group, and several others did so. They arrived in New York on August 6, 1774.

Ann Lee and her husband remained for some time in New York, he working as a blacksmith and she doing washing and ironing. Hocknell and William Lee proceeded up the Hudson and settled on a tract of land at Niscayuna (now Watervliet) near Albany. Ann Lee remained in New York long enough to nurse her husband through an illness, from which he finally recovered and thereupon proceeded to renounce Shaker principles and run off with another woman, whom he finally married.

Ann then joined the group at Watervliet. There they worked and preached. In 1780 she and her "elders" were arrested for treason because they preached against war and refused to fight or take oaths. They were released on good behavior, and she resumed her work of

preaching, making many converts and in 1781 making a tour through New England. According to Shaker legend she was bitterly persecuted, particularly by the clergy, but she worked miracles and converted many. She returned to Watervliet in 1783 and died there on September 8, 1784.

She left no organized church at her death and it is possible that one would never have existed if it had not been for the fact that three years later inhabitants of New Lebanon, New York, who had been inspired with religious earnestness by a revival in their village, came to Watervliet to get information about this new sect. As a result of this the first church was organized at New Lebanon (now Mt. Lebanon) in 1787. Others followed in rapid succession, particularly at those places in New England where Ann Lee had stopped on her tour. A church was organized at Hancock, Mass., in 1790; at Harvard, Mass., in 1791; at East Canterbury (Shaker Village), N. H., in 1792; at Shirley, Mass., Enfield, Conn., Tyringham, Mass., Gloucester, Maine, and Alfred, Maine, in 1793; at South Union, Ky., and Pleasant Hill, Ky., in 1805-7; and at various places in Indiana and Ohio, particularly Watervliet and Whitewater, Ohio, in 1811 and after. Some of these were based on earlier eccentric religious organizations, like that of Shadrack Ireland, at Harvard, Mass., and others, in Kentucky and Ohio, were the result of Shaker missionary effort applied to an already existing revival spirit in those localities. In 1832 the membership in the organization is supposed to have exceeded 4,000. In 1874 there were 58 Shaker communities with 2,415 population and owning 100,000 acres of land. In 1905 membership was estimated about 1,000, and it has probably decreased considerably since that time.

All of these communities were organized as communistic societies, but this was not originally a part of Shaker doctrine. In many communistic societies sexual abstinence was introduced as a means of limiting the population and providing a better chance for the success of the economic experiment, but in the case of the Shakers the sexual doctrines were a fundamental part of belief and the communism came merely as a matter of convenience in organizing their villages. Men and women lived together in "families" numbering from thirty to over one hundred, each "family" occupying a single large dwelling house in which alternate floors were ap-

propriated to each sex. There was supposed to be rigid supervision of this division, and in some cases separate workshops were built for men and women. Their religious ceremonies were held jointly, but confession of sins was always made to two members of the same sex as the confessor. The name "Shakers" or "Shaking Quakers" was given in derision while the group was in England, before the revelation to Ann Lee, and it referred to the curious shaking dance which was a part of their public worship. The members were willing to use the name Shakers for their group because they found that the verb "shake" occurs frequently in the Bible.

Beliefs.—The personal influence of Ann Lee on Shaker doctrine can not be too strongly emphasized. The group may be considered as an extreme branch of the Quakers, or merely as one quietist sect, but the public with which the Shakers have come in contact has always been more interested in the Shaker ideas and practices relating to sex than to any other concern of the group, and the members of the organization have been willing to have their ideas about sex stressed as the most important part of their religion. These ideas all go back to the unhappy experience of Ann Lee. Later justification of celibacy among the Shakers has been mere rationalization of this, drawing upon the Bible, Malthus, and a generous amount of pseudo-biology. Ann Lee herself was completely illiterate, so her only rationalizations came from familiar Bible texts.

God, according to Shaker belief, is hermaphroditic. According to Genesis i, 27, "God created man in his own image, in the image of God created He him, male and female created He them." If the images are male and female, they argue, the model after which they were made must be male and female also. In some Shaker writings it is claimed that Adam was an hermaphrodite also. The idea of the Trinity is definitely rejected.

Christ is the spirit of God which appeared first in Jesus, a man, and second in Ann Lee, a woman. Neither Jesus nor Ann is worshiped; both are merely elders in the Shaker church who happened to be specially favored by being the vehicles of the Christ. The evidence that Ann was the second representative of this is somewhat complex, ranging from Ann's vision in the jail in Manchester to such considerations as these: Jesus was the son of a carpenter, Ann the daughter of a blacksmith; Jesus appeared after his resurrection first to a woman, in order to demonstrate that the second coming of Christ would be through a woman; there are both a Bride and Bridegroom in the Apocalypse.

The millennium, or the kingdom of Christ on earth, began with the founding of the Shaker church. The Shakers are, then, in a state of existence closely paralleling that which will prevail in heaven. They answer the obvious catch question "What would happen to the Shakers if all the world took up their practice of celibacy?" by saying that the prohibition of sexual intercourse is intended only for those who have entered into Christ's kingdom on earth, or, as they put it, for those who have moved up "from the order of generation to the order of regeneration." The world (which they use as a technical term, meaning all non-Shakers) should proceed to engage in sexual intercourse until it has progressed to the level on which the Shakers live. There are some hints of a Shaker belief in spiritual copulation which results in the birth of souls, as physical copulation results in the birth of bodies, but the language in which these are expressed is so vague that little can be made of it.

The sinless life, which includes of course an absolute repression of all sexual desire (always referred to as Lust), they hold to be not only a practical possibility, but an absolute obligation upon those who would be saved. Those who continue to sin in this life, however, will have another chance of salvation in the next world.

During the decade 1837-47 the Shakers were spiritualistic. They stopped communicating with spirits at the end of this period, for what reason is not known. The official explanation of the Ministry was that a revelation had declared that it was all over. In the latter part

of the nineteenth century there was a growing tendency among the Shakers to regard themselves as representatives of the Pentacostal Church. The chief features of this were, according to the Shakers, common property, celibacy, non-resistance, separate and distinct government, and power over disease. All of these Shakers possessed, except the last, and they had hope for that.

The principal New Testament texts which are used by the Shakers to justify celibacy are Matthew xxii, 30; Mark xii, 25; and Luke xx, 34-36, parallel passages relating the retort of Jesus to the Sadducees: "In the resurrection they neither marry, nor are given in marriage, but are as the angels of God in heaven." They also used I Corinthians vii, Paul's plea for virginity. But the most decisive argument, and one which justified the rule of celibacy for the Shakers without enjoining it upon the world in general, they derived from Matthew xix, 11-12: "But he said unto them, All men cannot receive this saying, save they to whom it is given. For there are some eunuchs, which were so born from their mother's womb: and there are some eunuchs which were made eunuchs of men: and there be eunuchs, which have made themselves eunuchs for the kingdom of heaven's sake. He that is able to receive it, let him receive it." The Shakers pointed out that they were "able to receive it," although there seems to be no record of any of them actually castrating themselves, in the manner of Origen.

The Shaker church is not only a religion and a communistic society, but it is also to a considerable degree a feminist organization. A typical commentary on the liberation of the female which the Shakers believe celibacy gives is the following: "The daughters of Ann Lee, alone among women, rejoice in true freedom, not alone from the bondage of man's domination, but freedom also from the curse of that desire 'to her husband' by which, through the ages, he has ruled over her." (White and Taylor, *Shakerism*, 256). This feminism is carried out in the government of the church, half of the ruling "Ministry" being composed of women.

Practices.—No very complete and reliable body of evidence exists to show just how successful the Shaker theories of sex proved to be in practice. Most Shaker history has been written by members of the organization or by sympathizers with it, and the few pamphlets written on the other side usually show a violent personal bias. Elder Evans' statement is typical of Shaker pronouncements on the matter: "The Shakers testify that they, as a people, find more pleasure and enjoyment—*real good*—arising from the celibate spiritual union of the sexes, and more of an absence of the afflictions and annoyances—*real evil*—arising from the generative union of the sexes, than, as they believe, is ever experienced in the order of the world" (F. W. Evans, *Compendium*, 4th ed. 1859).

There exists, however, the record of an examination of the Shakers of Canterbury and Enfield by a committee of the New Hampshire legislature at the session of November, 1848, which throws some light on the state of things at that time and among those two groups. The examination was conducted before the judiciary committee for the petitioners by Hon. John S. Wells, and cross-examination in behalf of the Shakers was conducted by Gen. Franklin Pierce, Hon. Josiah Quincy, Ira Perley and William C. Prescott. The reason why legal interference with the sect was petitioned for, as explained by Mr. Wells, was that "there is no relation existing in society, of which the law is more jealous and watchful, than that which exists between husband and wife." Most of the difficulties which the Shakers encountered with society were of this nature, involving frequently a husband who had joined the sect while his wife remained outside, or vice versa.

At this investigation John S. Foster, who had lived with the Shakers about 33 years, had been an associate elder and preacher in the Middle Order of the organization, testified that he had left the community in September, 1839,

after the birth of a child to Zuba Arlin, another Shaker. Foster said that he had had intercourse with her for over a year and that he supposed himself to be the father of the child. This pregnancy of Zuba Arlin, it was brought out, was treated for seven months by the resident Shaker doctor as "inflammation of the bowels." Finally an outside physician was called in, but the child was stillborn. In spite of this incident, outside doctors who had attended patients at the Shaker communities testified that the Shakers took better care of their sick than most country people did. Dr. Thomas Chadbourn testified that there were many cases of cancer of the breast "and of the testicles" at Canterbury.

Mary Marshall Dyer, who conducted a pamphlet campaign against the Shakers between the years 1818 and 1848, maintained that there was much promiscuous fornication among the Shakers but that few children were born because they had a method of sterilization (*Brief Statement of the Sufferings of Mary Dyer*, Boston, 1818). But all of Mary Dyer's statements were attacked in print by her husband, whose joining the organization was the cause of her violence against the sect. On the whole, remarkably little scandal in the matter of sexual practices ever reached the dignity of print.

As is to be expected, there is some suggestion of perversion, masturbation, and what the Shakers refer to as "effeminacy" in the history of the organization. Some of this came out in the New Hampshire Legislature investigation. Former Elder James M. Otis testified that at a public meeting of the society Hester Ann Adams accused Catherine Lyon of "gratifying her lusts with a cleaver." "The cleaver was of iron, and about three feet long; handle two feet. It was laid in the middle of the floor, before Catherine Lyon, who had been seated upon her haunches. Hester Ann then said that the cleaver was written all over, handle, blade and all. Then it was read by Hester, part

in English, and part in unknown tongue. She read 'lust, filth, abomination, gratification of lusts.' This accusation was apparently sufficient to convince the Shakers, for Catherine Lyon was hooted out of the room and was disgraced by being stripped of her cap and handkerchief. It is interesting to note, however, that she was not expelled from the community, and she apparently remained there.

On the whole, however, the Shakers seem to have been more successful in maintaining their celibacy than most groups of the kind have been. This may be the result of several causes, among which it is probable that the age of the members and the unhappy experience of marriage which many of them had undergone previously are the most important. The usual Shaker costume for women, consisting of bonnet, shawl, and long straight dress, was calculated to reduce to a minimum any possible temptation for the men. The manual labor which was universal in Shaker communities and the orgiastic kind of public worship which was practised may also have done something to make repression easier.

The Shaker church is the oldest communistic society in existence, and it is of some interest to inquire why it has declined almost to the point of disappearance in recent years. In 1832 a disinterested observer, summing up his impressions of the Lebanon community in a letter to a friend, saw several reasons for the probable continuation and success of the movement:

"I can easily conceive, Sir, that to persons who have been disappointed in their expectations and become disgusted with the world, to such as have a strong inclination to engage in extraordinary religious devotion, and to those also, who are not capable of taking care of themselves, this Society holds out strong inducements. It presents to them a resting place from the storms and buffetings of an angry world, an asylum of peace and tranquillity, a home for the helpless and wretched, where they may serve their Creator, and render themselves useful and comparatively happy for the remainder of their weary pilgrimage." (*Peculiarities of the Shakers*. . . . *By a Visitor*, New York, 1832.)

The attractiveness of an escape from an angry world to some individuals is probably as great as it was a hundred years ago, but the Shaker society is no longer the one to which such individuals turn. It may be because the attitude of the American public toward sex has changed enough in the past hundred years so that the principal feature of Shakerism is no longer attractive, even to a few.

Wight Collection of Shaker Pamphlets, Books and Manuscripts in the Library of Williams College; John P. Maclean, *A Bibliography of Shaker Literature*, Columbus, 1905; Thomas Brown, *An Account of the people called Shakers*, Troy, N. Y., 1812; John Dunlavy, *The Manifesto*, New York, 1847; Mary Marshall Dyer, *A Brief Statement of the Sufferings of Mary Dyer*, Boston, 1818; F. W. Evans, *Shakers* . . . New York, 1859, *Autobiography of a Shaker*, New York, 1888; W. J. Haskett, *Shakerism Unmasked*, Pittsfield, 1828. W. A. Hinds, *American Communities*, Chicago, 1902; *Report of the examination of the Shakers* . . . before the New Hampshire Legislature, Concord, N. H., 1849; R. W. Pelham, *A Shaker Answer*, Boston, 1874; Clara E. Sears, *Gleanings from old Shaker Journals*, Boston, 1916; (Silliman, Benjamin) *Peculiarities of the Shakers* . . . N. Y. 1832; Anna White and L. S. Taylor, *Shakerism, its meaning and message*, Columbus, 1904; *Dictionary of National Biography and Dictionary of American Biography*, articles on Ann Lee.

H. D. S.

SIGNUM INFAME. An obscene manual sign, in which one finger is raised to represent the penis, while the others are closed to depict the testicles. Suetonius (*Caligula*) tells of the Emperor's extending his hand to be kissed, while giving it "an obscene shape and movement." Heliogabalus, according to his biographer, Lampridius, "never permitted an indecent word, though the fingers indicated something shameful." This was in keeping with the old proverb, *Tam bonum facere quam malum dicere*—"everything that is good to do is not good to say." The result was, something like an erotic sign-language grew up, and became a fad at the court of the Emperors. The signs were frequently made so rapidly as to escape observation. Certain of the Emperors best known for their vices would appear to have put the

signum infame under a ban and heavy penalties were provided for an infraction of the rule. In the meanwhile, the gesture, whether practised or forbidden, had brought to the middle digit the nickname of "infamous finger" (Persius, ii, 23); the Greeks had a similar feeling about the *digitus medius*. See INFAMOUS FINGER.

SOCIOLOGICAL FACTORS IN SEX BEHAVIOR DIFFERENCES. Since the middle of the 18th century speculation concerning the nature of sex differences has invariably taken the form of a dispute between those who emphasized the supremacy of physical constitution, regarding sexual traits as specific, fixed and innate, and those who held the opposite view that they had their origin in man-made institutions and were consequently cultivated and mutable. On the one side were arrayed the environmentalists who followed the tradition of revolutionary rationalism, together with the pioneers of feminism; on the other the serried ranks of common-sense patriarchal males, supported by revealed religion and Aristotelian science, with its insistence on ideal categories and concepts.

In the absence of historical and anthropological evidence, the environmentalists founded their arguments mainly upon the doctrine of natural rights. But the times were with them, and the growth of capitalist industrialism and of an economic surplus, accompanied by democratic ideals in government and the new social phenomenon of humanitarianism, revolutionized the status of women. Inevitably the popular doctrine of the specificity of sex traits was called into question.

But our experience of post-war reaction in Europe enables us to recognize that the enemies of feminism were never really silenced, even in the U.S.A. which represented the most complete experiment in liberal industrialism. In the world of science the popularity of the "instinct" school in psychology, the discovery of the chromosome mechanism of sex determination and the medical

emphasis on neuropathic diathesis seemed to confirm the traditional belief in the innate dissimilarity of the sexes. The existence of a "maternal instinct" was postulated as the mechanism which ensured the perpetuation both of the human race and of male dominance; sex-linkage appeared to provide the key to the segregation of male traits in men and female traits in women; while the view that the invert possessed the constitution of the opposite sex, by presenting sexual deviations as unnatural, enabled us to disregard the sociological context of sexual behavior.

Before discussing the sociological aspects of the contemporary sexual problem, we may briefly summarize what is known with exactness concerning the respective contribution of nature and nurture to observed sex differences. Some of the biological differences between the sexes are now very well known. In the animal kingdom males invariably produce sperms and females egg-cells. In general this primary distinction is accompanied by anatomical differences of a secondary kind, which may be either as conspicuous as the antlers of a stag or apprehended only statistically, as in the case of the mean difference in the height and weight of men and women. These secondary sexual characters may depend directly on the chromosomes, or only indirectly, in so far as they are promoted by the secretion of testis or ovary when these organs begin to function. In mammals the majority of anatomical differences are associated with the reproductive cycle in the female, which begins with menstruation and frequently, though not invariably, continues into pregnancy and lactation.

Males and females differ also in sexual behavior, e.g., the so-called courtship dance of scorpions and some birds. Below the primates such differences in behavior, like anatomical differences, seem to depend largely upon constitutional differences between the sexes. But this is not true, as Zuckermann has pointed out, of monkeys, in whose sexual behav-

ior differences in learned reactions, involving central nervous system patterns, play a very large part.

As yet we lack the means to decide what characteristics of sexual behavior in man are sex-linked, or otherwise constitutional, and thus relatively unamenable to environmental agencies, and what are conspicuously modified by habit and training. Much work has been done on the metabolic and glandular, e.g., pituitary changes associated with the reproductive cycle, but we have little indisputable evidence of the way in which these affect the functioning either of the sympathetic or of the central nervous system.

Psychologists can point to numerous regular differences in the behavior of the sexes, but few of them can be attributed with any certainty to differences in "innate" nervous organization. There are notable differences in the sexual incidence of the various psychoses and neuroses, but they are not more striking than the different racial and social incidence of these disorders. Henderson and Gillespie have shown that while hysteria is usually held to be more common among women and anxiety states among men, the former was also more common among the rank-and-file and the latter in the officer class of the British Army during the Great War. This suggests the possibility that different modes of training and social relationship play an important rôle in determining the distribution of nervous disorders.

With the exception of a few rare cases of hermaphroditism and of almost total reversal of secondary sexual characteristics, there is little likelihood that abnormalities of sexual behavior can be interpreted in terms of simple interchange of sex constitution, as Havelock Ellis and the German school of sexologists have believed. Attempts to find mean differences between the genital development of normal and of homosexual males have signally failed, while the histological and glandular evidence is contradictory. In many cases of "total" inversion and in almost all cases of or-

dinary homosexuality an explanation in terms of social psychology accords as well, if not better, with the available evidence.

The work of Freud and his school, while at one time unduly stressing certain environmental conditioning agencies, has provided a very large number of alternative hypotheses. In particular, the light thrown by psychoanalysis upon the intricate psychological mechanisms within the psyche opens up a fertile field for types of inquiry that start at the point where genetic research leaves off. The assumption of reversal of sex constitution is especially gratuitous when we recognize the possibility that mental weakness of a cerebral kind, perhaps accompanied by glandular defect, may induce states of passivity or aggression or non-conformity with social norms, leading in a society where sex norms are rigidly enforced to conduct characteristic of the opposite sex. In the analogous case of criminality, this hypothesis is now generally accepted.

Although it would be idle to deny that general constitutional factors, as contrasted with specific sexual differences in constitution, are also involved in their incidence, recent anthropological research leaves no doubt that inversion, transvesticism and other sexual deviations are social, not genetic phenomena. Such data have abundantly illustrated three general propositions. Firstly, there are considerable historical and geographical disparities in the distribution of sex behavior differences. Secondly, irrespective of the nature of the differentiation in any given society, there exists within it a more or less standardized polarity in sexual behavior. Thirdly, there are remarkably few human characteristics which are predominantly associated with one sex in all societies at all times. The overwhelming proof of these statements now available makes untenable the traditional belief that the different behavior of males and females in Anglo-Saxon countries today arises from specific differences in chromosome inheritance or anatomical

organization. They suggest further that the temperamental disparities popularly associated with sex differences are unlikely to be genetic in origin or otherwise "innate" or "instinctive."

Recent research in Mendelian genetics affords the most conclusive refutation of the view that the social behavior of the sexes has a simple chromosome basis. The sex intergrades in different races of the chocolate moth and the fruit fly can be arranged on a graduated scale corresponding to differences in the "strength" of their X and Y chromosomes. There is no such graduation in the sexual behavior of human beings. Where males deviate from the conventional norm for masculine characteristics, they seldom exhibit a lower all-round "average level" of masculinity. It is unlikely that the concept of "general masculinity" or "general femininity" will prove to be so useful as that of general intelligence. In a highly-stratified society, for example, manly members of the ruling class will display a sensitivity to insult, opprobrium and lapses of taste that would be stigmatized as effeminate in the ranks of the commercial bourgeoisie. Intellectual timidity has come to be identified with the feminine and prowess in athletics with the masculine character. Yet it is very common for males pre-eminent in manly games to be intellectually timid and for those who are intellectually intrepid to shrink from combative sports.

Among recent anthropologists Gregory Bateson and Margaret Mead have elaborated the notion that in all societies certain human traits have been socially specialized as the appropriate attitudes and behavior of one sex and other specialized for the opposite sex. There can be no doubt of the substantial truth of this point of view. As a corollary, it has also been suggested that temperaments are distributed among the offspring of human matings irrespective of sex, and that no aspect of temperament is by inheritance or constitution specifically masculine or specifically feminine. We lack the evidence that would establish

the validity of this more general hypothesis, but, with certain modifications, it is not inherently improbable. Several important consequences would follow, if it were true, relating to the realms of both public and private morality.

We have good grounds for believing that the polarization which customarily takes place in the behavior of the two sexes has represented an attempt by a community at one stage or other to adapt its norms to the urgent conditions either for mere survival or for the enhancement of its welfare. The institutions that come into existence as a consequence may cease to perform their original functions and thus acquire a new significance, or they may atrophy and new ways of living take their place. But in a self-conscious and rational civilization like our own there arises the need to plan our social arrangements deliberately, in the service of those values which we esteem most highly. Whatever may be the historical explanation of the rise of the modern women's movement, there is practical unanimity for the assertion that it has enriched the content of civilized existence.

On the other hand, the triumph of feminism is associated with a grave decline in the power of western nations to reproduce themselves. The researches of Kuczynski, Enid Charles and others have conclusively shown that North American and European populations have started on a road that must lead inevitably, if not checked, to the total extinction of these peoples. In other words, the social and ideological framework of modern societies has ceased to conform with the most elementary condition of biological survival, without which it is idle to dream and plan for the future, or to pursue social efforts that yield only a distant dividend.

The result is a recrudescence of patriarchal and repressive ideals in Germany, Italy and Central Europe, designed partly to stem the decline in the age-groups of military usefulness. The wheel has come full circle and the entire gains of the feminist movement are

in process of ruthless destruction. Humanitarianism itself is threatened. The violence of the reaction, entirely unforeseen by liberal social thinkers, may itself be the fault of our own failure to assess at their proper value those forces in human nature and social organization that are essentially resistant to rapid change. The family pattern of the U.S.S.R. has recently been modified, thus disappointing the hopes of the extreme left wing in bourgeois countries. Even in England there may be observed signs of a restriction of the economic opportunities enjoyed by women.

In these circumstances, it may well be asked whether at least some of the goals of feminism have not been misconceived. It is possible that we shall have to take measures to standardize the behavior of the sexes in ways directed to restore our lost capacity for biological survival. In discussing this prospect, however, we must not overlook the possibility that other social agencies besides feminism are responsible for the impending eclipse of our culture; that the evolution of tendencies inherent in capitalist industrialism was the underlying cause of the characteristic form assumed by the feminist movement during the last century.

If women have ceased to breed, it is not without the connivance and encouragement of men. Secular forces not peculiar to one sex have led to the disavowal of the duty of parenthood. Is it necessary, to avoid a calamitous fall in the population, that we must reinstate the dominance of the male and revive the traditional forms of sex polarization, with their concomitants of a dual standard of morality and legal status and of inferior economic opportunities for the child-bearing sex? The sociologist is beginning to realize that capitalist industrialism itself creates new values destructive of the homely and arduous enjoyments of family life; that competitive standards of living, a pecuniary canon of welfare and an emphasis on the ostentatious consumption of ephemeral commodities and serv-

ices, bring into existence an ideology that disparages the less novel and sensational, less additive and accumulative rewards of parenthood.

An economic system that arose when men began to think seriously of the future has found its nemesis in a generation that lives entirely in the present. The position can only get worse as the increasing age-composition of the population leads to an extension of the age of irresponsibility and a diversion of the resources of society to the maintenance and amusement of the elderly.

A history of the achievements of feminism free from false sentiment and factual error has still to be written. The only significant improvement that feminism has effected in the larger destinies of mankind lies in the growth of humanitarianism. Otherwise there is hardly any realm of human activity which would have been very different from what it is, had there been no women's movement. There is an uneasy feeling that woman has learned what is superficial in the behavior of man, rather than taken an equal share in his graver responsibilities; that she has imitated his tricks instead of improving her own powers. She has modelled herself upon the temporary standards of a leisure society without understanding the agencies which in the past were responsible for its existence or the measures that are necessary to ensure its continuance.

The ability of women to profit by education, of the type originally devised for men only, has now been demonstrated beyond a doubt. Surveys employing standardized mental tests show no reliable difference between the mean I.Q. of girls and boys subjected to the same educational routine. There is greater uncertainty concerning the post-pubertal ages. It is possible that the sexual metamorphosis in women induces endocrine rhythms that disable them from exercising the purely intellectual processes as unhampered as men. On the other hand, if parturition is avoided, as it is in the U. S. A. by one-third of

all women, it is evident that they can pursue an occupation for as long a period and as efficiently as men. Even in the case of mothers, the hindrances to a professional or commercial career proceed more from difficulties in the organization of the home than from any physiological or psychological change that necessarily succeeds maternity.

But the possession of a central nervous system not potentially inferior to that of men and the ability to form learned reactions as easily as men, do not exhaust the issue. For example, the achievements of the human race in science, art and technics and in religion and philosophy do not depend exclusively on intellect as we are accustomed to define it. We do not know how far women resemble men in those aspects of behavior that we describe as temperament and character. If a generalization be permitted, it may be argued that women do not make good engineers, mechanics or inventors and that they do not excel in the non-literary arts, e.g. music, painting and plastics, film and play direction. They have produced few administrators and politicians and play no part at all in the field of military organization.

Where women have recently enjoyed approximately equal opportunities with men, as in the case of the arts, we may assert with a fair degree of confidence that the observed inequalities probably arise from constitutional differences not easily amenable to environmental influences. It is not true that the superior bodily strength of the male has ceased to be a significant factor in society. It excludes women from those heavy occupations, as yet imperfectly mechanised, on which the material fabric of our civilization still rests and from participation in what is still the most important occupation of all, namely warfare.

It is clear, however, that women might make good industrial workers, if lighter metals were employed and electrolytic methods substituted for the heavier processes based on a coal and

oil economy. We are undoubtedly moving towards an epoch in which cellulose products, light metals and electricity will preponderate. The assertion that women cannot play an equal part in the social organization of the present time does not preclude their equality and even supremacy in a world of a different kind. When reactionaries argue that women can never be the equals of men, they really mean that they cannot surpass men in working the machinery of a society that has been shaped by men.

A female-dominated world would inevitably be a different sort of world, though no less a world of human beings, carrying on a characteristically human mode of existence and culture. It only weakens their case when feminists allege that there is nothing men commonly do that women cannot also do. Such claims are more aggressive than any put forward by men, who have never thought that they could bear children. The whole discussion of this topic is vitiated by a thoroughly false conception of the meaning of sex equality. The use of this metaphor in a naïve arithmetical sense suggests by analogy that the relation symbolized is one of identity.

On the contrary the proper balance of the sexes will be achieved when each sex is permitted to develop unhindered the specific powers which each can be shown, in free experiment, to possess. It is astonishing that few feminists are content to rest their case on the supreme importance of the child-bearing function of women; and that most regard it as the primary cause of their inferior status in the past. Imitating men, they have over-valued economic and intellectual processes and abdicated their biological function. Consequently a population crisis has arisen which, far from putting a scarcity value on the reproductive services of women, is much more likely to provoke a patriarchal reaction on the part of the still paramount male. The fact that men have instigated and encouraged the social de-

velopments that have culminated in an ideology of infertility will not prevent them taking this revenge.

Efforts by liberals to save what is valuable in the achievements of the last hundred years will, therefore, take at least three forms. First, they will have to undertake the reconstruction of the economic basis of society, which probably lies at the root of the biological crisis. Second, they will have to wage a defensive war against those who seek to restore the traditional behavior norms for the sexes. Third, they will have to urge that public as well as private welfare demands the still further breaking down of many of the old sexual polarities. For example, it is clear that we must hold out inducements to maternity, some of which will no doubt have to be indirectly compulsory, in so far as propaganda in favor of child-bearing may play a vital part in the education of future generations of girl children.

But maternity is not incompatible with a system of family life in which women, not men are dominant in certain rôles. In other words, the reinstatement of the family need not involve the subjection of women in every department of matrimony. Arrangements can be made for them to resume their occupations when their children have passed out of infancy and for finding them employment after their children have grown up and left the home. It may be possible to cultivate a less anxious outlook upon the tasks of parenthood, to apply theory more empirically in the upbringing of children, to lessen the violence of contemporary health and food fads, to cease "coddling" children and incorporate them in the economy of the home.

Experience suggests that the divorce of sexual companionship from parenthood made possible by contraception has not added as much to marital happiness as our radical forbears anticipated. If this is so, it has arisen not only from the frequent lack of children to consolidate a very difficult pattern of mutual

adjustment, where emotions and ideals are not often enough externalized and depersonalized, but also from a mistaken belief that sexual freedom for women involves identity of behavior between the sexes within the framework of the sexual union itself. Men have not yielded in their attempt to live up to the conventional pattern set for masculine behavior. Women have too often aimed at capturing that standard for themselves. It is highly doubtful if an intimate relationship involving only two persons can work smoothly unless it is recognized either that one member is everywhere dominant, or that each ought to lead the other in certain realms of activity.

Unions of temperamental likes, whether the identity is constitutional or the product of socially imposed patterns, are rarely successful. It may well be that the ideal type of mating is not assortative but the marriage of complementaries. There is no reason why it should not be the female partner who displays those characteristics that we commonly associate with the masculinoid temperament. The Victorians regarded all males as sadistic and females as invariably masochistic. We ought to recognize that there are already enough, and might be a great many more women who are sadists and men who are masochists. With an increased diversity of marital structure and the liquidation of rigid sex antitheses should come more stable ways of emotional living and thus a lessened reluctance to embark on parenthood.

Thus from the standpoints of both population policy and private welfare, a recognition of the non-specific nature of the distribution of temperamental traits between the sexes is a necessary condition of an enlightened sexual science. The reinstatement of the family as the cell-unit of human society should not in the long run prove incompatible with the enhancement of individual freedom and a richer pattern of sexual and emotional relationships. On the other hand, those who stubbornly deny

the primary significance of maternity in the social rôle of women risk not only the revival of repellent male persecution but the continuance of the human species itself.

Calverton and Schmalhausen (ed.) *The New Generation*. Enid Charles, *The Twilight of Parenthood*. Havelock Ellis, *Man and Woman*. Goodsell, *The Family as a Social and Educational Institution*. Groves and Ogburn, *American Marriage and Family Relations*. W. Fannina Halle, *Die Frau in Sowjetrussland*. Henderson and Gillespie, *Textbook of Psychiatry*. L. Hogben, *Nature and Nurture*. R. R. Kuczynski, *The Measurement of Population Growth*. H. Lion, *Zur Soziologie der Frauenbewegung*. B. Malinowski, *Sex and Repression in Savage Societies; The Sexual Lives of Savages*. Margaret Mead, *Coming of Age in Samoa; Sex and Temperament in Three Primitive Societies*. E. Westermarck, *History of Human Marriage*. S. Zuckermann, *The Social Life of Monkeys and Apes*.
J. L. G.

STAËL, MADAME DE. ANNE LOUISE GERMAINE NECKER, BARONNE DE STAËL-HOLSTEIN (1766-1817), French author. Mme. de Staël was the daughter of Jacques Necker, the Swiss banker who became Louis XIV's Minister of Finance, and Mme. Necker whom, as Suzanne Curchod, the Lausanne schoolmistress, Gibbon had jilted in obedience to his father. Born on April 2, 1766, she was brought up in her mother's salon, and, though far from beautiful, was remarked for her precocious intelligence, and flattered, by the philosophers and politicians who frequented it. Her marriage to the Baron de Staël-Holstein, the Swedish Ambassador to France, in 1786, was arranged by her father, without reference to her wishes, for the gratification of his political ambitions, after an attempt to marry her to William Pitt had failed.

She was not in love with him, and did not pretend to be. She was in love with General Guibert, who could not marry her because he already had a wife; and a pessimistic comment on the marriage tie, obviously inspired by that affair, which we find in one of her earliest essays shows us in what spirit she entered upon married life:

"It is the tie of all others in which it is least possible to obtain the romantic happiness

of the heart. To keep the peace in this relationship it is necessary to exercise a self-control and to make sacrifices which cause this kind of existence to approximate more nearly to the pleasures of virtue than to the joys of passion."

Neither she nor her husband, however, exercised the self-control or made the sacrifices here recommended as likely to be useful. M. de Staël had a mistress, a natural son, and a tempestuous affair with the popular actress, Mlle. Clairon. Mme. de Staël had so many lovers that no list of them can be confidently presented as complete and no one has ever felt quite sure which, if any, of them was the father of her three children, Auguste, Albert, and Albertine.

Narbonne, Talleyrand, Mathieu de Montmorency, and Benjamin Constant are the best known of those belonging to the early period. Gouverneur Morris, the American Ambassador, believed that he might, if he had wished, have been included in the number. But she did not change her lovers out of caprice, or regard the change as an end in itself. She looked upon it, rather, as a regrettable necessity, and a means to an end, that end being happiness—the right to happiness being, in her eyes, the most important of all women's rights.

Happiness in marriage was the ideal—for her unfortunately unattainable. Happiness in love was the next best thing, occasionally obtainable, though too often transitory. Renown whether in the literary or the political world, was only a *pis-aller*. "Fame," she declared—it is, perhaps, the most famous of her sayings—"is only a splendid mourning for happiness."

Her lovers found her a good friend as well as a passionate mistress. She delighted to help them in their troubles and to push their fortunes in the world. She pushed Narbonne into the War Office, Talleyrand into the Foreign Office, and Benjamin Constant into a seat in Parliament. But she was terribly possessive and exigent, and, though not herself exclusive in her affections—for she is said to have distributed friend-

ship as the charitable societies distribute coals and blankets—regarded as her property, for the remainder of his life, any man who responded to her advances.

Moreover her vision of life was a vision of Mme. de Staël surrounded by other people brought into the world to applaud while she gave performances and to make fair copies of her manuscripts in their leisure hours. Consequently they nearly always tired of her before she tired of them, and she said, summing the matter up, towards the end of her life: "I always loved my lovers more than they loved me in return."

That was true even of her relations with Benjamin Constant, who seems to have loved her longer and more passionately than any of the others, and who, in the end, married a woman for whom he really cared very little in order to escape from a liaison which had become a servitude, writing in his *Journal Intime*: "What a mad passion it was that dominated me and ended by placing me under the domination of the most imperious creature in the world!" And also: "I am tired of the 'man woman' whose iron hand has held me enchained for ten years when I have with me a woman who is really a woman to intoxicate and enchant me."

It is in that story, indeed, as told in that unique psychological document, the *Journal Intime*, that we find our most striking illustrations of Mme. de Staël's imperious and possessive temper and also of her pride in the celebrity which she had attained. She refused to marry Benjamin when M. de Staël's death left her free to do so on the ground that her literary and political importance made it impossible for her to change her name without embarrassing and perplexing Europe; but she claimed the right, at the same time, to monopolise his attentions and forbid him to marry any one else. When he resented these humiliating demands, she not only made a violent scene, but sent her sons to remonstrate with him for treating their

mother so badly, and their remonstrances took the form of challenges to duels which he was wise enough to decline.

When she did take a second husband—a handsome young fire-eater named Rocca—she insisted that the marriage should be a secret one, that the child born of it should be boarded out and brought up in ignorance of his relationship to her, and that Rocca should attend her, wherever she went, in the character of lover. "Monsieur L'Amant" is Byron's description of him. He had to be kept in the background when she came to England and figured as the lion of a London season, and he did not dare to raise any objection when she tried, unsuccessfully as it happened, to persuade Benjamin Constant to return to her, writing:

"Benjamin, you have destroyed my life. For ten years no day has gone by without my suffering on your account. How I loved you! Let us leave all that alone, as it is so cruel—and yet I shall never be able to forgive you, as I have never ceased to suffer. Our life is as a house built on the sand and full of weariness—nothing but sorrow endures."

It is an amazing emotional situation. Presented in a novel it would be derided as incredible even by those who recognise the type of woman delineated and exaggerated. One takes notice of it here, not only because it really occurred, but because it appears as the emotional setting of the life of a woman of both political and literary distinction—a woman who, if things had fallen out a little differently, would, no doubt, have spoken of love as a splendid mourning for fame instead of depreciating fame as a splendid mourning for happiness.

She was, indeed, notorious rather than famous, owing more of her renown to her eccentricities than to her achievements—eccentricities which her great wealth helped to make conspicuous. Her influence as a salonière was short-lived and limited and directed to the promotion of the interests of individuals rather than to the modification of policies. Her so-called "duel" with

Napoleon was far from having the importance which she herself attached to it. She was, in his eyes, not a formidable enemy, but a nuisance to be kept out of the way.

It is only as a woman of letters that she really counts, and she counts as a woman of letters only in so far as her writings were manifestoes of those new views of the relations of the sexes which one associates with the Romantic Movement. As a critic of Italian art and an exponent of German philosophy she did little more than reproduce, with sentimental additions, what she had been told by her sons' tutor Schlegel, prefacing Kant's metaphysical generalisations with the sentimental qualification, *Pour les âmes sensibles*, and interpolating in the midst of them a sentimental section headed: "De l'Amour dans le Mariage." It is only in her novels—*Delphine* and *Corinne*—that she speaks throughout for herself.

Both novels were popular; but neither of them, judged merely as a work of fiction, is very good. Their importance is as essays in self-portraiture—*Delphine* depicting Mme. de Staël as she would have liked to see herself, and *Corinne* portraying her as she actually was—and as expositions of her doctrine that every woman, however unhappily married, is entitled to find happiness in love, even if some man has to sacrifice his career, and his wife, as Benjamin Constant was called upon to do, in order to provide her with it.

But she did not, except in her writings, preach that doctrine quite consistently or always allow others the liberty which she claimed for herself. Her family pride and her social position sometimes prevented her from doing so in her later years, as is attested in a little character sketch of her, found among Benjamin Constant's papers, which describes her as a woman who always does what she wishes to do, and always believes that whatever she wishes to do must be right, and can be supported by first principles divinely sanctioned.

"If she is in love," he writes, "and if the object of her love has a will that opposes her own, and speaks of the claims of his family and his duties, or asserts any other title to independence, partial or complete, permanent or transitory, then nothing is more beautiful than to hear Mme. de Staël talk with all the energy of the Nouvelle Héloïse of the communion of souls, of devotion, which is the sacred duty of every superior nature, of happiness, and of the sacro-sanctity of two existences indissolubly linked together."

"Is she, on the other hand," he continues, "a mother, and does one of her children prefer the enthusiasm of an absorbing passion to the obedience which she claims? Then nothing is more sublime than the picture which she draws of the duties of filial piety, the rights of a mother, and the necessity of a young man's disengaging himself from frivolous affections in order to enter upon an honorable career; for every man owes an account to Providence for the faculties which Providence has given him, and woe upon him who thinks that he can live for love. In all that Mme. de Staël is not an egoist; for she does not mean to be one, and morality is a matter of conscience."

He spoke, no doubt, the more feelingly because Mme. de Staël's insistence that he should give her happiness in love without regard to his wife's claim on his affection had been a formidable obstruction to his own pursuit of political advancement which he did not, in fact, succeed in obtaining until after her death. F. G.

STEATOPYGA, excessive fatness of the buttocks, a characteristic of certain Africans, particularly Hottentot women. The first known representation of a woman, the limestone statuette of a paleolithic woman, dating back about 22,000 B.C., found in the loess of the Aurignacian period, and known as the Venus of Willendorf, should be compared with the living Hottentot Venus of to-day, since both illustrate the primitive man's penchant for fleshiness in his females. The primitive woman holding the bison-horn, known as the Venus of Laussel, found in a rock-shelter in the Dorgogne, likewise shows the invariable fat-buttocked condition. Primitive man himself is depicted as straight and slender, but he liked his women round, and thus the pendulous breasts and overdevelopment of the buttocks were due not only

to too much cave-life and too much meat, but to selection.

Charles Darwin (*Descent of Man*, 1871, xix): "It is well known that with many Hottentot women the posterior part of the body projects in a wonderful manner; they are steatopygous; and Sir Andrew Smith is certain that this peculiarity is greatly admired by the men. He once saw a woman who was considered a beauty, and she was so immensely developed behind, that when seated on level ground she could not rise, and had to push herself along until she came to a slope. Some of the women in various negro tribes have the same peculiarity; and, according to Burton, the Somal men are said to choose their wives by ranging them in a line, and by picking her out who projects farthest a *tergo*."

STERILIZATION, HUMAN. Of the 125,000,000 people in our country, over 25,000,000 are socially maladjusted or unadjusted. These people include the mentally diseased, such as the manics and the dementia præcoxes; the dependents such as the unemployed, the deaf, the deformed and the blind; the delinquents such as the wayward and the criminals; the mentally deficient such as the morons and the idiots; the degenerates such as the sadists and drug fiends; and the infectious such as the tuberculous and the syphilitics.

What is the cause of this social pathology? There are those who contend that our complicated order of society conditions this wastage of mankind. On the one hand, there are those who contend that many of these classes of social unfits have inherited their insufficiencies and are thus condemned to social perdition. We do not deny either the influence of environment or inheritance in the development of the human personality, but we cannot agree with the exaggerated claims of both environmentalists and hereditists. Many propagandists have prostituted what very scant scientific knowledge we have of human heredity and eugenics to justify ancestor worship, race superiority, snobbery, class distinction, intellectual aristocracy and race prejudice. The science of eugenics warrants no such conclusions. Its future is promising, but at present it needs debunking; it needs

more research and less propaganda. Until that time, those scientists, who are much too certain of the heritability of many of our social ills, should hold in abeyance their elaborate schemes of immigration regulation, birth control, restrictive marriage legislation, state infanticide, and human sterilization legislation.

Human sterilization is distinctly a eugenic and therapeutic agency, intended to improve the quality of the race and the health of the individual. The question as to whether the individual's mental or physical health is improved by sterilization still remains mooted. More sound biologic knowledge for such a drastic program is still wanting and much of our existing biologic knowledge needs correcting. It is not true that celebrated individuals necessarily beget celebrated offspring. It is not true that idiotic individuals necessarily beget idiotic children. It is not true that the Jukes and the Kallikaks beget only criminal and idiotic children. It is not true that the Edwards family begets only superior children. It is not true that a mental trait, like high intelligence or idiocy, is transmissible in accordance with the Mendelian theory. It is not true that there are more children in the families in which both parents are idiots or feeble-minded than in which both parents are normal mentally.

However, the legality of our recent human sterilization legislation is definitely established. Unfortunately, it is predicated on insufficient and at times incorrect biologic knowledge. These laws should therefore be suspended in many cases until we have better biologic and hereditary justification. At least we should be certain of the heritability of the ailment of the persons we are about to sterilize.

Twenty-seven states may legally practise human sterilization surgery in the United States to-day. Sixty-six different human sterilization laws have been enacted since the legal inception of the movement in our country in Indiana in 1907. The first human sterilization act

was introduced in 1897 in the Michigan legislature but it failed to be enacted. About 20,063 individuals have already been sterilized under the onus of this legislation. Many more individuals have been sterilized but these cases have not been recorded for fear of legal complications.

The United States is the pioneer in this movement and she is to-day the foremost champion and advocate of the cause in the world. In 1928 the province of Alberta in Canada, in 1929 Denmark, Finland, and the canton of Vaud in Switzerland, in 1932 the state of Vera Cruz in Mexico, and in 1933 Germany espoused the cause. These foreign governments are the only other governments that have adopted this legislation. England, Norway, Sweden, and Western Australia are seriously considering adopting this social therapeutic agent at the present time.

The judicial history of human sterilization in the courts of the United States is interesting. Under the barrage of criticisms of religionists, humanitarians, and legalists, this legislation has run the gauntlet of the higher courts of the states. On eight different occasions, the respective state human sterilization laws were declared unconstitutional because they violated the Fourteenth Amendment to the Federal constitution in that they denied "due process of law" and "equal protection of the laws" to all classes of people, and because the surgical operation was "a cruel and unusual punishment" and therefore constituted a violation of the state constitution.

In eleven instances the constitutionality of the acts was upheld. Especially has this been true since the eventful *Buck v. Bell* decision of May 2, 1927 in the United States Supreme Court. The court held unequivocally that the Virginia state law, authorizing the sterilization of mental defectives and others, under careful safeguards, is not void under the Fourteenth Amendment to the Federal constitution since Carrie Buck was given an adequate trial and

that she was not discriminated against arbitrarily as over against similar hereditary idiots at liberty. The early sterilization operations were usually castrations or the corresponding ovariectomies and hence the early court decisions declared them to be "cruel and unusual punishments" and therefore illegal. With the advent of vasectomy and salpingectomy, this legal difficulty is eliminated. Vasectomy is a simple minor operation which provides for the cutting and the ligating (tying off) of both sperm ducts, thus preventing the emission of the sperm. Salpingectomy is a similar operation, except that both oviducts are cut and ligated, thus preventing the entrance of the ova into the womb. Surgeons have not been successful in making either operation reversible. Patients experience as little pain as if they had a tooth extracted and convalesce completely in several days. By virtue of this Federal Supreme Court decision, many new human sterilization laws were enacted.

The dependents, such as the unemployed, the deaf, the deformed and the blind; the delinquents, such as the wayward and the criminals; the degenerates, such as the sadists and the drug fiends; and the infectious, such as the tuberculars, the syphilitics, and the lepers need not engage our attention. Most eugenists are in accord that their insufficiencies, *per se*, have been largely acquired or learned rather than inherited and that these unfortunates should not be subject to coercive human sterilization. It is in regard to the two chronic and malignant groups of patients, that is, the mentally diseased, such as the manics and the dementia præcoxes, and the mentally deficient, such as the morons and the idiots, that there is considerable controversy concerning their causes. The question is still mooted. Its solution is fundamental to any constructive program for human sterilization. Yet most of the sterilization patients have been from these two categories.

More eugenists are in agreement that

psychoses or mental diseases are acquired rather than inherited but the preponderance of opinion is in favor of the theory that the mental deficiencies are inherited. Nevertheless, the answer to the problem of the heritability of the mental deficiencies is still conjectural. The psychotics or the mentally diseased have few children because they are comparatively short-lived, and they lack sexual attraction. The perniciousness of it all is that most of the psychotics are born of normal or apparently normal parents who are latent carriers of mental disease. Here, too, the menace to society is not the obviously mental deficient but the individual who is a latent carrier of mental deficiency in his or her germplasm. In recent years experimentalists, especially educationists, have been busily engaged trying to establish the relative importance of the rôles of nature and nurture in both low intelligence and high intelligence, but in vain. If anything, the controversy to-day is further from solution than it ever was, especially with the advent of behavioristic psychology and its emphasis upon environment as a factor in intelligence.

As for the therapeutic value of the human sterilization surgery of vasectomy or salpingectomy, the literature is meagre, cursory and frequently prejudicial. The California studies would seem to lead to the conclusion that the sterilization surgeries of vasectomy or salpingectomy do not unsex the patients or noticeably change their sex lives, and improve their health. Other reports would lead to a contrary conclusion. In a California study, it was found that about one third of the married people who were sterilized were unhappy for various reasons. This proportion would have been perhaps larger among mentally normal people.

Of the various classes of socially inadequate people who are subject to the human sterilization legislation of the present, the feeble-minded, the idiots, the insane, the epileptics and the imbeciles are most frequently included. It should be so since these classes of men-

tal ailments display the greatest proof of inheritance, though perhaps not altogether conclusively. Yet other classes of people, such as prostitutes, convicts of at least two felonies, drug fiends and sodomists are subject to compulsory sterilization, though, in accordance with the better scientific information, these people suffer from ailments that are acquired and that may well be cured or arrested during their lifetimes. It might be mentioned that these classes of people are rarely included.

The execution of the various human sterilization laws reveals a glaring discrepancy between science and fact. In 15 states reporting, 6,246 compulsory sterilization operations were performed on insane persons, 2,938 on feeble-minded persons, 55 on persons suffering from epilepsy, 16 on criminals and 5 on those suffering from nervous disorders. About twice as many operations were performed on the insane as on the feeble-minded. Yet, all eugenicists would agree that feeble-mindedness is much more hereditary than insanity and criminality. The number of operations on the feeble-minded should have exceeded that of the insane.

Only the statutes of California, Nebraska, South Dakota, Oklahoma, West Virginia, and Maine provide for the sterilization of inmates of institutions who are about to be paroled or discharged. All other sterilization acts make no such provision. Unless the sterilization operation has a therapeutic effect on the patient, there seems to be no justification for the operation. Its therapeutic value, as already indicated, is conjectural. Unless we can restore these sterilized people to society, why sterilize them? The eugenic justification for the sterilization of custodial inmates is not tenable.

What seems even more unreasonable is the fact that the sterilization acts apply primarily to mental patients in institutions when the alleged menace to society is the presence of these mental patients at large. Only Delaware, Iowa, Maine, Michigan, New Hampshire,

North Carolina, Oregon, South Dakota, Vermont and Indiana statutes provide for the sterilization of their selected dysgenics at large. Of course, it is, as a practical proposition, difficult to reach these people at liberty. Nevertheless, state agencies ought to be established in order to bring them into the pale of the law.

In several institutions for the insane in California, there were about 1000 institutionalized insane in the year 1927 suffering from dementia præcox and manic-depressiveness. After two years of institutionalization subsequent to the performance of the sterilizations, 67 per cent of the males and 79 per cent of the females, of those sterilized insane inmates who were studied, were still institutionalized. In a study of 605 case histories of the feeble-minded in the same state, 34 per cent of the males and 28 per cent of the females were still institutionalized. Advocates of human sterilization urge in behalf of the cause that it is not only an agency for race betterment but that its therapeutic value is so great that many of these people can be restored to society successfully and with impunity. These California studies are adduced to bear out this contention. Is the successful return to society of the feeble-minded patient due to the effects of the surgery or due to the conditioning, the vocational training and the psychotherapy the patient received in the institution? The results of Fernald, Mathews, Potter, McCollister and Bernstein, with their psychotherapy, occupational therapy, medication, diet and the like, have been equally as good as those in California. Their patients are paroled or discharged whenever they show the proper emotional and mental constitution, which condition may really be the fundamental cause for the successful return of the sterilized or non-sterilized mental patients to society. The question of the eugenics of mental traits needs more research than speculation.

The states of our country which have human sterilization laws (December,

1934) in the order in which their first laws were enacted are: Indiana, California, Connecticut, Washington, Iowa, Kansas, Michigan, North Dakota, Wisconsin, Nebraska, New Hampshire, Oregon, South Dakota, Alabama, North Carolina, Delaware, Montana, Virginia, Idaho, Maine, Minnesota, Utah, Mississippi, Arizona, West Virginia, Oklahoma and Vermont.

At one time the states of Nevada, New Jersey and New York had human sterilization laws, but not now.

GENERAL SURVEY: For a general survey of the problem of human sterilization in its eugenic, biologic, social, historical, legal, judicial, surgical, and therapeutic aspects, consult *Human Sterilization* (1932) by J. H. Landman; *Eugenical Sterilization in the United States* (1922) and *Eugenical Sterilization* (1926) by H. H. Laughlin; and *Sterilization for Human Betterment* by E. Gosney and P. Popenoe.—**EUGENICS:** E. M. East, *Heredity and Human Affairs* (1927), and *Mankind at the Crossroads* (1923); M. Grant, *Passing of the Great Race* (1921); A. E. Wiggam, *Fruit of the Family Tree* (1924), and *New Decalogue of Science* (1923).—**FREQUENCY OF MENTAL AILMENTS:** Government Printing Office, *Feeble-minded and Epileptics in State Institutions, 1926 and 1927* (1931); *Feeble-minded and Epileptics in State Institutions, 1928* (1931); *Mental Patients in State Hospitals, 1926 and 1927* (1930); *Patients in Hospitals for Mental Disease, 1923* (1926).—**NATURE OF MENTAL AILMENTS:** S. E. Jelliffe, and W. A. White, *Diseases of the Nervous System* (1929); Association for Research in Nervous and Mental Disease, *Heredity in Nervous and Mental Disease* (1925); W. Healy, *Mental Conflicts and Misconduct* (1917); A. Myerson, *Inheritance of Mental Diseases* (1925).—**SURGERY:** R. L. Dickinson, *Sterilization without Unsexing* (1929), *Journal of the American Medical Association*, 373-79.

J. H. L.

STERILIZATION LAW OF VIRGINIA. Heredity has been designated as the etiological factor in from 60 to 80 per cent of the cases of insanity, feeble-mindedness and epilepsy; and millions of dollars have been and are being spent to provide treatment for these diseases with the same result: the insane and epileptic will not stay cured, but are returned from furlough or discharge, leaving children behind to continue the blight on the human race. Although in all ages the curse of a bad

inheritance was recognized, it remained for Dr. Harry Sharp of Indiana in 1899 to teach and demonstrate the practical method of preventing the reproduction of the unfit by the unfit by *vasectomy* and *salpingectomy*.

It is indeed surprising that this procedure could have remained so long unthought of and unpractised, when today it seems the only feasible way to improve the mentality of our race. Like Jenner's vaccination, sterilization had and still has its enemies, and is attacked by some as criminal, yet it is the sole practical solution of the problem of the betterment of the human race. No person unable to support himself on account of his inherited mental condition has a right to be born.

The present writer was the first in the State of Virginia, so far as he can learn, to recommend sexual sterilization in selected cases. This recommendation was made, timidly, as a prophylactic measure in the annual report of the Western State Hospital (1908), and more boldly in the 1909 annual report of that institution. In the report for 1911 the writer again recommended sterilization of weaklings and the unfit by some legal process. The State was at that time spending \$500,000 annually for the care of her insane, epileptics and feeble-minded.

This same year (1911) A. S. Priddy, Superintendent State Colony for Epileptics and Feeble-Minded, in his annual report wrote: "Therefore, it seems not inopportune to call the attention of our law-makers to the consideration of the application of legalized eugenics for the prevention of this growing blight on our population, by restricting the marriage of epileptics, the insane, feeble-minded and confirmed alcoholics, and also to give thought to the practicability of a law permitting the sterilization of inmates of our eleemosynary and penal institutions in such cases as is deemed proper and as provided for and in practice under the laws of Indiana and other States."

Reference was again made by Dr. Priddy to this subject in his annual reports of 1913, 1915, 1916 and 1922. Quoting from his annual report for 1916: "Under the authority given the Board by the recent act of the General Assembly we have sterilized twenty

young, high-grade, feeble-minded women of the moron type, whose mental deficiency did not render them unfit for earning their own living when placed under the control of the proper person. We have sterilized, under order of the Board, four males showing vicious and dangerous tendencies."

In the same report, Dr. Priddy stated: "In nearly all of these operations diseased conditions were found, for the relief of which alone the operations were justified."

There was no specific act of the General Assembly to authorize these operations. They were performed on the broad and liberal interpretation of one of its acts by the Board of Directors and Dr. Priddy, the Superintendent. The Act ordered necessary medical and surgical treatment for the inmates. Continuing to operate on this indefinite authority, Dr. Priddy was sued for \$5,000 damages. He won on the ground that a diseased condition necessitated the operation.

In 1912, Dr. W. F. Drewry, Superintendent Central State Hospital, in his annual report speaks of the chief causes of insanity and mentions sterilization among the preventive measures. In his report for 1913 he states: "Among the progressive steps in preventive measures that should be taken are segregation of defectives and epileptics, and sterilization of certain defective classes." Again, in his report for 1917, Dr. Drewry, in speaking of eradicating the causative factors, states: "Conservative sterilization and adequate provision for the feeble-minded and epileptic would simplify the problem." (In later reports (1922-23), referring to measures for checking the propagation of the unfit, he says: "Sterilization in many cases of the mentally afflicted should be legalized.")

In his annual report of 1915, in recommending sterilization as a cheap and effective method of prevention, the writer suggested that a board of physicians be created to examine cases and decide when operation was necessary; that the procedure be made compulsory; and that an educational program be inaugurated. In an effort to start an educational program I wrote a pamphlet on heredity and sterilization, but the State Board of Health refused to publish it, in full, as sterilization was thought to be too radical.

In my annual report for 1919, I recommended a statute forbidding marriage between individuals with bad heredity, and recommended sterilization in selected cases with protection for those who operate, pointing out that sterilization with discretion would lift many burdens from both home and State.

In the 1920 report I again made a plea for legalized sterilization, stating that according to Mendel's Law the mentally unfit are as much manufactured articles as plows and harrows, and recommended that a statute providing a due process of law be passed, so that the operation could be performed. With the hope of aiding this important piece of legislation I even wrote a poem on the subject (*Mendel's Law*, Report of the Western State Hospital, 1920, p. 13).

Dr. A. S. Priddy, who had served in the Virginia State Legislature prior to being elected to the superintendency of the Virginia State Epileptic Colony at Lynchburg, gave valuable assistance in getting the Sterilization Law of Virginia passed. In 1920 he became active in behalf of this measure; at a meeting of the General Board of State Hospitals, with the Superintendents of the State Hospitals and Governor E. Lee Trinkle, Dr. Priddy and the present writer were ordered to prepare a bill for the sterilization of the unfit. Dr. W. F. Drewry, at that time superintendent of the Central State Hospital, opposed the move before the legislative committee on the ground that the citizens were not ready for such a radical measure. We prepared the bill and it was presented before the legislative committee of the House by Dr. Peter Winston, member from Prince Edward County.

We were rewarded for our trouble by one vote (Dr. Winston's), and were laughed at by the law-makers who suggested they might fall victim to their own legislation. Ridicule is often an effective weapon; but this time it did not kill, it only postponed, the passage of the Sterilization Law.

According to an estimate made by the method of Professor Laughlin in the Eugenics Record Office we had in 1924 in the State of Virginia 15,000 feeble-minded, 9000 insane, and 600 epileptics. Goaded on by these statistics, Dr. Priddy and I determined to make another effort towards legalizing sterilization of the unfit of our State.

This time we carried our troubles to Senator A. E. Strode of Lynchburg who drew up Virginia's present Sterilization Law. When this bill came before the House Committee Dr. Priddy and I appeared before the committee and plead for its passage. Dr. H. C. Henry, then Superintendent of Central State Hospital, was present and sympathetic. It was introduced into the Senate by Honorable Marshall Booker of Halifax County and supported by Governor E. Lee Trinkle, with the result that the bill was passed almost unanimously by both Houses.

Our Virginia law is both humane and economical, and is destined to save millions in dollars and more in accidents, crimes, disgrace, suffering and poverty and eventually to raise our standard of intelligence. Under the Virginia Law the sterilized individual can go out into the world, marry and live his sexual life with no danger of adding to the burdens of society or of lowering the intelligence of the nation.

Upon Dr. Priddy's decease, Dr. J. H. Bell was elected superintendent of the State Epileptic Colony, and became an enthusiastic champion of the sterilization law. We cannot estimate too highly his work for this great measure. The Virginia law on sexual sterilization was the first sterilization law to stand the test of the United States Court of Appeals in the celebrated case of Buck against Bell.

In 1924 this case, then Buck against Priddy, was submitted by Dr. Priddy to the Circuit Court of Amherst County, Judge Gordon sitting. Dr. Priddy and I were the only physicians testifying in this tribunal. From this court it was appealed to the Court of Appeals of Virginia and then to the Supreme Court of the United States.

Justice Oliver Wendell Holmes, in handing down the decision of the United States Court, said in part: "We have seen more than once that the State may call upon the best of its citizens for their lives; it would be strange indeed if we could not call upon those who already sap the strength of the State for those lesser sacrifices often not felt to be such by

those concerned. In order to protect us from being swamped by incompetents, it is better for all the world, instead of waiting to execute degenerate offspring for crimes or let them starve for their imbecility, if society can prevent those who are manifestly unfit for continuing their kind. The principle that sustains compulsory vaccination is broad enough to cover cutting the Fallopian tubes. Three generations of imbeciles are enough——”

This law, passed March 20, 1924, requires each patient before sterilized to be adjudicated insane, epileptic or feeble-minded by a commission composed of two physicians and one Justice of the Peace. The Superintendent of one of the State Hospitals must receive the patient and certify, in his opinion, that the patient's condition is caused by heredity, and can be transmitted to his offspring. He must present him to the Special Board of Directors of the Hospital. A guardian must be appointed by the Court, and the patient and his parents or next of kin must be notified if the Special Board decides upon sterilization.

After 30 days the parents of the patients or next of kin and the guardian are notified again. If they wish to contest his sterilization they must appeal to the court within 30 more days. If no objections are made, after 30 days the guardian and friends and relatives have lost their day in court, and the operation is performed. The officers of the various State Hospitals cannot be sued for damages after going through this procedure. The law directs salpingectomy in the female and vasectomy in the male. These operations make the woman safe from pelvic cellulitis and salpingitis, and the man from orchitis.

In Virginia we have sterilized, to January 1, 1935, in round numbers, 2000—about $\frac{1}{10}$ of all legal sterilizations in the United States. Estimating each patient would have fifty descendants in five generations we will have eliminated in that period 100,000 more or less defective possibilities from our State.

J. S. De.

STERILIZATION OF PRISONERS.

During the past year (1935) there has developed among a number of the prisoners at the California State Prison at San Quentin a desire to have vasectomy performed upon them. Some state that they have looked at the matter in a philosophical manner, realize that there may be something lacking in their make-up, and that they do not want any of their bad qualities to be transmitted to their offspring. Others have read considerable about the so-called “Steinach operation” which leads them to believe that their health in general will be benefited. Others have requested sterilization to be performed merely to follow the example of some of the other prisoners.

During the year 1933 the operation was performed upon twenty prisoners; during 1934, upon thirty-one; while during the year 1935 to May 1st, twenty-three prisoners have been sterilized.

The operation itself is quite simple. With local anesthesia the scrotum is incised, the vas is held in position by towel clamps, hemostats, or tissue forceps, crushed, severed, and returned to the scrotum. The skin is closed with one catgut suture. The patient returns immediately to his work. Hospitalization is not necessary. All of these men are required to sign a request for this operation.

The laws of the State of California do not provide for asexualization except in very extreme cases. The California Statutes of 1913, Act 539, provide as follows:

“Section 2. Whenever in the opinion of the resident physician of any state prison it will be beneficial and conducive to the benefit of the physical, mental or moral condition of any recidivist lawfully confined in such state prison, to be asexualized, then such physician shall call in consultation the general superintendent of the state hospitals and the secretary of the State Board of Health, and they shall jointly examine into the particulars of the case with the said resident physician, and if in their opinion or the opinion of any two of them asexualization will be beneficial to such recidivist, they may perform the same; pro-

vided that such operation shall not be performed unless the recidivist has been committed to a state prison in this or some other state or country at least two times for rape, assault with intent to commit rape, or seduction, or at least three times for any other crime or crimes, and shall have given evidence while an

and, provided, further, that in the case of convicts sentenced to state prison for life, who exhibit continued evidence of moral and sexual depravity, the right to asexualize them, as provided in this section, shall apply whether they shall have been inmates of a state prison in this or any other country or state more than one time or not; provided, further, that nothing in this act shall apply or refer to any voluntary patient confined or kept in any state hospital of his state."

It can readily be seen that this section is ineffective. No case comes within its scope. It has never been applied at this prison.

Section 645 of the Penal Code provides as follows:

"Whenever any person shall be adjudged guilty of carnal abuse of a female person under the age of ten years, the court may, in addition to such other punishment or confinement as may be imposed, direct an operation to be performed upon such person, for the prevention of procreation."

But in this statute the matter of constitutionality has been brought up. It is contended that vasectomy is unconstitutional in that an operation for the prevention of procreation is a cruel punishment, prohibited by an article of the state constitution which directs that "excessive bail shall not be required, excessive fines imposed, nor cruel punishment inflicted." Be that as it may, this statute has not been enforced in California. No operations for asexualization of criminals have been ordered or authorized at the State Prison in the past twenty-two years.

Sterilization of the feeble minded and insane is carried out quite extensively in the homes for the feeble minded and hospitals for the insane in California. To do this procedure the consent of the guardian is usually required.

It can be conceded that sterilization of the habitual criminal would be de-

sirable in many cases, but it would be a difficult matter to determine to just what cases this should be applied. The ordinary criminal is not as a rule a family man. The procreation of children is one of his least desires. With

dental. Again, it must be realized that not every man who is convicted of a felony has a bad mental taint. Should sterilization of prisoners come into effect, great care would necessarily have to be used in selecting the proper ones for this procedure. L. L. S.

STOLA, or **STOLE**, the outer tunic of the Roman woman, worn over the inner tunic or chemise; the stola reached to the feet, and was fastened around the body by a girdle; over the stola was draped the wrap or palla. As the stola was the characteristic garment of the Roman matron, corresponding to the toga of the Roman male, courtezans and women divorced for adultery (*in adulterio deprehensae*) were not permitted to wear it. Such women could wear only the toga, which was a mark of infamy in a woman and a mark of distinction in a man.

Thus Martial's *matrisque togatae* (vi, 4) means "of a harlot mother." In another epigram he asks (i, 35): "Who brings garments into Flora's festival, and permits prostitutes the modesty of the stole?" Also (ii, 39): "You present a notorious adulteress with scarlet and violet dresses. Do you want to give her the present she has deserved? Send her a toga."

STRABISMUS, or **SQUINT**, an incoordination due to lack of parallelism of the visual axes of the eyes; if one or both eyes turn inward, the condition is popularly termed *cross-eyed*. Squint, which is usually regarded as a disfigurement, may act as a sexual lure. The most celebrated instance is that of Descartes: "he was nurtured in the gardens of southern Touraine, where he had as a playmate a little girl with a squint, whose early friendship made him regard this defect, whenever he met it, with favor."¹

¹ John Pentland Mahaffy, *Descartes* (1880).

Not only individuals, but races may find attraction in cross-eyes. Hirschfeld² records the following observations: "I found myself in company of twelve Egyptians, ten of whom were cross-eyed. Even though this may have been an exceptional case, certain it is that the number of cross-eyed persons is relatively higher in Egypt than either in Europe or in Asia. Whether, as I have heard several persons maintain, it is a phenomenon of degeneration is more than doubtful, especially since it is noticeable that the squint enhances rather than disfigures the appearance of the Egyptian man and woman. A European is amused at Descartes' squint fetichism, but in Egypt this predilection loses the comic aspect. A story was told to me of a German ophthalmologist who had previously visited Egypt as a tourist. He was an excellent operator for strabismus, and seeing so many prospective patients he decided to settle in Cairo. But practically no one came to his office. Too late he found out that the Egyptians did not wish to be cured of the squint; on the contrary, they consider cross-eyes interesting, as others do a little liver spot or joined eyebrows. In both sexes, the chance of marriage is enhanced, rather than diminished, by the squint."

STUPRATIO OFFICIALIS (Latin; literally, an *official debauching*.) General term applied to a group of customs, corresponding to the *Jus Primæ Noctis*, or *Droit du Seigneur*, which properly belongs under this head, in which the deflowering of a bride is accomplished by an *official* superior, whether by king, chief, priest, tribal elders, or, as formerly among the Philippine Basayos, public officers retained and paid for the purpose.

SUBIGUS. Roman God of the wedding night, from the Latin, *subigere*, to lay under. Referred to by St. Augustine, *De civitate Dei*, vi, 9. Subigus assisted the bridegroom, as Prima did the bride.

² Magnus Hirschfeld, *Die Weltreise eines Sexualforschers*, 1933, p. 299.

SUICIDE, SEXUAL FACTORS IN.

The sexual factors in suicide are so innumerable that they preclude precise limitation. Far above all others come the factors derived from the marriage relation which, if profoundly disturbed, are unquestionably one of the chief causes of suicide attributable to sex. Disappointment in love ranks first among the young who find their affections ill responded to by the object of their solicitude. Disappointment in the character of the beloved is probably the next important factor, particularly among women. Such disappointments are as a rule hidden deep in the inner consciousness of the victim and rarely find their explanation in the letters or fragmentary notes left behind by the voluntarily deceased. Impotence on the part of the male is an important element in the suicide of men just before or soon after the wedding day. Infidelity is another leading cause among the suicides of men and women.

Divorce ranks high but not as high as is often assumed to be the case, but the suicide rate of the divorced is invariably far in excess of the corresponding rate of the married. Widowhood proves unbearable in many cases and relief is sought in self-destruction. Jealousy, the lowest form of human passions, frequently combines suicide with murder. Childless marriages have their effect in raising the suicide rate of the married. Homosexuality has of late years come to the front as an important element in suicide as shown by Placzek and others familiar with this most discouraging of all problems of abnormal psychology.

To the extent that the sex relations of the general population lean toward an increase in the number of unmarried men and women, reaching a disproportionate sex distribution generally, suicide inclinations are bound to increase and demand the attention of the medical profession and the professional psychologists. Loneliness of young men and women in large cities is another factor

generally obscured by the want of exact information, but its mental effects and sexual reactions often are as tragic as they are confusing to the specialist called upon for advice.

Actual sexual disorders or impairments of sexual functions are no doubt a fruitful cause of suicide. As observed by Max Hühner (*Disorders of the Sexual Function*, 1916): "I will not attempt to give here a graphic description of the miseries and psychic emotions of the impotent man, but will simply state that this condition is at times the cause of the most extreme unhappiness, and not infrequently leads to suicide. In fact, it has been pointed out by those who have investigated the subject, that not a few of the mysterious suicides, committed by apparently happy and contented men shortly after their marriage, were due to their discovering that they were impotent."

After a scathing indictment of the negative characteristic traits of women compared with men, Otto Weininger (*Sex and Character*) points to the difference in methods of suicide of women, amplified by the following observation: "Such suicides are accompanied practically always by thoughts of other people, what they will think, how they will mourn over them, how grieved—or angry—they will be. Every woman is convinced that her unhappiness is undeserved at the time she kills herself; she pities herself exceedingly with the sort of self-compassion which is only a 'weeping with others when they weep.'"

Hans Rost (*Bibliography of Suicide*) calls attention to the contribution in which Max Marcuse (*Handbook of Sexual Science*) refers to the connection between sexuality and suicide and its complications and unusual complexities. Rost is of the opinion that the period of puberty and early adolescence indicates a rapid increase in the suicide death rate due to misplaced love and affection, aside from syphilis, homosexuality, menstruation, etc. Unquestionably sexual aberrations are a profound factor in adolescence, the study of which has as yet yielded only fragmentary results.

The sexual life of the young is far too often a closed book to parents and teachers who try in vain to penetrate to the soul life of the child harassed by problems far beyond its understanding and yielding apparently to no other conclusion than that self-destruction is the best way out. The exaggerated importance attached to sex abnormalities or perversion, which in most cases are only a temporary phase of early adolescence, draws heavily upon the spiritual resources of the young who finally give

way to a condition of the uttermost despair.

Rost remarks that for the age period 16-20, 14.6% of the male suicides and 40% of the female suicides are due to unsatisfactory love affairs or sexual aberrations. According to Hirschfeld, as quoted by Rost, out of 10,000 homosexuals, 3% committed suicide, while more than one-fourth attempted suicide and about three-fourths contemplated suicide in a more or less vague or disturbed state of mind. Many of these, in apprehension of legal prosecution, carried poison or other means of self-destruction about them.

In double suicides in early adolescence, Rost claims that the woman is as a rule the active factor while the man yields only slowly to the suggestion. In young women of this age period, or somewhat lower, the consequences of seduction are frequently the suicide motive and possibly more frequently the case than is known. The suicide of brides immediately before the wedding or soon afterwards is attributed to sexual indiscretions coming to light in their realm of actual experience. Rost quotes considerable literature on the sexual aspects of suicide.

The feminine aspects of suicide find their best illustration in the widely variable distribution of suicidal deaths by different methods employed in self-destruction. Louis I. Dublin (*To Be or Not To Be*, 1933) gives a table showing percentages of suicides by specified methods or means according to sex and age for white persons in the United States registration states, 1926-1930. His figures are highly illuminating and sufficient for the purpose of emphasizing the point of view at present under consideration. Dublin shows that while men at all age periods committed suicide by firearms to the extent of 41%, the corresponding figure for women was 14.7%, a wide disparity due primarily to the facility with which firearms are available to men.

The present writer does not think it so much the fear of mutilation by shooting that keeps women from committing suicide by firearms as the inaccessibility of firearms to women under conditions of normal everyday life. In hanging, women approach men much more closely in this country, the proportion for men being 19.5% and 14.1% for women. The greatest disparity is shown in the proportions for suicides due to poison, or 11.7% for men and 31.9% for women. A higher proportion is also shown for women in the case of ~~poisoning~~ ^{poisoning}, or 21.1% against 13.2% for men. Suicides due to cutting or piercing instruments involve, of course, the question of bodily mutilation, and the proportion is much higher among men than among women, or 6% for the former and 3.3% for the latter. Suicides due to drowning show a higher proportion for women, or 7.6% against 4.3% for men. Curi-

ously the proportion for suicides due to jumping from high places is higher for women than for men. In the case of men the proportion, according to Dublin's table, is 2.5% against 5% for women. Other methods and means covering a slight proportion of the remainder do not require discussion.

When these statistics are examined by age periods they become much more pronounced and interesting. The results are given in the form of two tables:

Percentage of Suicides Using Specified Method or Means, Classified by Sex and Broad Age Groups, White Persons, U. S. Registration States, 1926-1930

Method	Percentage of Total				
	All Ages	10-24	25-44	45-65	65 and Over
<i>White Males</i>					
By firearms	41.0	52.8	41.6	39.1	39.3
Hanging	19.5	14.5	16.7	20.6	24.2
Poisons	11.7	15.1	14.1	10.5	8.6
Gas	13.2	9.7	13.2	14.6	11.6
Cutting or Piercing					
Instruments	6.0	1.6	5.4	6.6	7.2
Drowning	4.3	2.9	3.7	4.6	5.5
Jumping from high places	2.5	2.0	3.2	2.2	2.1
Crushing	1.0	.8	1.3	.9	.7
Other means	.8	.6	.8	.9	.8
<i>White Females</i>					
By firearms	14.7	22.6	16.2	11.5	5.6
Hanging	14.1	3.4	11.1	20.6	23.2
Poisons	31.9	53.0	35.5	21.1	15.7
	21.1	12.0	21.2	23.9	26.7
	3.3	.6	2.6	4.8	6.2
Drowning	7.6	4.0	6.0	9.9	13.9
Jumping from high places	5.0	2.4	5.2	5.7	5.9
Crushing	.8	1.1	.9	.6	.5
Other means	1.5	.9	1.3	1.9	2.3

It is not easy to draw satisfactory conclusions from these tabulations without an extended reexamination of the original facts which are not available. Suicides rarely leave coherent letters or coherent explanations of self-destruction, while much of what is communicated to members of the family must be accepted with caution for it does not necessarily follow that the entire truth is told in what is said.

An outstanding fact of statistical studies of suicide by methods and means is the predilection of women to poisons, gas and jumping from high places. Efforts at prevention should keep these facts in mind and guard more or less unbalanced women more effectively than is often the case. Recently, for example, there was a suicide of a young

woman who jumped from the Empire State Building, more than a thousand feet above the ground. It only goes to show that courage to end life by self-destruction is not exclusively a masculine trait. Equally suggestive is the recent suicide of two young women who jumped from an airplane in Europe. They were the daughters of the American Consul General of Naples and had been profoundly affected by the unhappy termination of their love affairs. This spectacular suicide was soon followed by a similar one elsewhere. But the choice of method in suicide is largely proportionate to the accessibility of the means for self-destruction. In countries where the carrying of concealable firearms is prohibited, the suicide rate by this means is also less than in countries in which such prohibition is not the case. Drastic prohibition of the possession and carrying of concealable firearms would unquestionably prevent many a suicide.

Most of the official suicide statistics are limited to suicide deaths taking no account of the suicide impulse as measured much more accurately by suicide attempts. As a matter of fact the latter, in the case of women, almost invariably outnumber the former. In other words the suicidal impulse apparently is much greater among women than among men. Most regrettably, however, we have no useful statistics for this country of suicide attempts which are not, as a rule, accurately or completely reported to the police. Among the best suicide statistics with which the writer is familiar are those for Vienna:

Suicide in Vienna, 1927-1929

	Successful		Unsuccessful	
	Male	Female	Male	Female
1927	547	332	690	835
1928	613	436	689	1,324
1929	609	435	922	1,322
	1,869	1,203	2,301	3,481

We amplify the foregoing table with statistics for Hungary for 1932, according to which the proportion of successful suicides was 67% for men and 35% for women. The proportion of suicide attempts involving serious injury was

8.7% among men and 15.2% among women, while the proportion involving minor injury was 24.1% among men and 49.2% among women. In actual figures, there were 2,181 successful suicides among men and 909 among women. Suicide attempts involving serious injury numbered 283 among men and 387 among women, while attempts involving minor injury numbered 782 among men and 1,254 among women. In other words, there was a total of 3,246 suicide attempts among men, successful or unsuccessful, and 2,550 among women, a total for both sexes of 5,796.

The statistics of suicide for Hungary also differentiate the alleged motive as best shown in the table following:

Suicide by Motive in Hungary, 1932

	Males		Females	
	No.	% of Total	No.	% of Total
Incurable disease	553	17.6	392	15.3
Insanity	286	8.8	121	4.7
Tired of life	354	10.9	190	7.5
Unemployment, misery and other misfortune	966	29.8	576	22.6
Family or domestic trouble	421	13.0	560	22.6
Love affairs	263	8.7	450	17.6
Crime	79	2.5	33	1.3
Other motives	324	8.7	228	8.4
	3,246	100.0	2,550	100.0

While in this country 41% of the males commit suicide by firearms, the corresponding proportion for Hungary in 1932 was only 14.4%. For women the proportion for this country was 14.7% against 2.5% for Hungary. For Hungary the proportion of suicides due to hanging was 45.8% for men against 19.5% for this country, and for women, 16.8% and 14.1%. Poisons caused 17.7% of the suicides of men in Hungary and 55.5% of women. The corresponding proportions for this country, according to Dublin's table, were 11.7% for men and 31.9% for women. Jumping from high places caused 1.2% of the suicides among men in Hungary and 2.5% among women, against 2.5% for men in this country and 5% for women. Of course the fact that tall buildings, hospitals, hotels, etc., are much more common in this country than in Hun-

gary will in part account for the difference.

In amplifying the preceding tabulation for Hungary, with a table of suicides by motive for France, 1906-1910, we regret to have no later figures, but the data given will serve the purpose of emphasizing the sexual aspects of the problem to good advantage:

Suicide According to Motive, in France, 1906-1910

	Males		Females	
	No. of Suicides	%	No. of Suicides	%
Poverty or fear of poverty	2,905	7.9	766	6.9
Economical embarrassment, loss of position, loss by lawsuit or by gambling	2,337	6.3	278	2.3
Domestic troubles	3,118	8.4	1,257	11.3
Disappointment in love, jealousy	1,150	3.1	991	8.9
Debauchery, misconduct	655	1.8	155	1.4
Drunkenness	5,274	14.3	631	5.7
Desire to evade judicial or disciplinary punishment	781	2.1	106	1.0
Physical suffering	8,191	22.2	2,415	21.8
Disgust with military service	172	0.5		
Various difficulties	2,367	6.4	804	7.3
Mental affections	5,059	13.7	2,443	22.0
Unknown motives	4,909	13.3	1,235	11.2
Total	36,918	100.0	11,081	100.0

In the case of the French we have a totally different distribution from that of Hungary, emphasizing the extreme complexities of the sexual aspects of the problem. The table does not call for extended comment but is quoted as a matter of convenient reference.

Nor is it necessary to consider at length the sex distribution which is discussed by nearly every authority on the subject. The time factor is of importance, for the distribution varies from year to year, and often with a considerable range in the rates. To calculate the distribution from gross numbers is absolutely fallacious since, of course, everything depends upon the corresponding sex distribution of the population concerned. It is therefore best to base the observed differences on the rates per 100,000 or per 1,000,000, as the case may be. The longest series of observations available is for Finland,

commencing with the year 1751. The lowest rate for males occurred during the period 1771-80, or 15.5 per 1,000,000, while for females the lowest rate occurred in 1781-90, or 2.9. During that period the male rate was 17.6, or a relative ratio of females to males of 16.5%. By 1930 the rate had increased to 370 per 1,000,000 for males, and 69.1 for females, giving a ratio of 18.7% for females. The ratio has been as high as 27.7% in 1911-20, suggestive of wide variations in sexual distribution for suicide.

The data for Sweden go back to 1781, and for 1781-90, the male suicide rate was 3.42 per 100,000, while the female rate was 1.12, a ratio of 32.8% of females to males. In 1931 the highest rate on record was reached, or 26.5 per 100,000 for males and 6.76 for females, or a ratio of 25.5%. The ratio is shown to have gradually decreased from a maximum of 32.8% in 1781-90 to 21.2% in 1901-10.

The ratio for England and Wales was 30% in 1861-70, reaching a first maximum of 32.4% in 1881-1900. In 1932 the ratio of females to males was 38.6%.

Without further enlarging upon this aspect of the problem, we repeat Morselli's statement: "In every country the proportion is 1 woman to 3 or 4 men." But this is true only of certain countries and not for all countries as best illustrated in the case of India where in several provinces, the rate for women measurably exceeds that for men. This fact has not escaped most modern writers on suicide, and among others, Ruth Cavan, in her study of Suicide, gives a table for India, 1907, according to which the ratio of female suicides to male suicides was as high as 193.3% for the provinces of Agra and Oudh, 183% in the North West Border Provinces and 177.1% in Bengal.

I have tabulated the returns for eight Indian provinces, 1927-31, showing the male rate to be 3.41 per 100,000 and the female rate 5.06, or a ratio of 148.4%. But in India we are confronted by very

special conditions of the so-called *suttee*, or the voluntary suicide of the widow burning herself to death on the funeral pyre of her departed husband. While this practice is prohibited in India at the present time, it is carried on surreptitiously in certain provinces, and to a measurable extent as illustrated by the comparative suicide statistics of certain provinces. Here, however, we deal with the question of compulsory suicide according to the moral laws of the Hindus, and voluntary suicide due to other motives.

*Sex and Suicide in India, 1927-31**

Province	Total		Rate per 100,000		Females per 100 Males
	Suicides	Males	Females		
Assam	1,272	3.18	2.44		76.7
Bengal	11,966	4.80	7.21		150.2
Bihar & Orissa	11,317	4.37	6.54		149.7
Central Prov. & Berar	4,216	4.50	5.09		113.1
Madras	9,220	3.66	4.29		117.2
N. W. Frontier Provs.	83	0.40	0.29		72.5
Punjab	1,262	1.08	1.07		99.1
United Provinces & Agra & Oudh	9,451	2.39	5.48		229.3
	48,787	3.41	5.06		148.4

*Bengal figures 1927-30

Out of 47,787 suicides, 20,260 were males and 28,527 were females.

Attention is not often drawn to the relatively high suicide rate of women in Japan. Combining the returns for the period 1923-30, it appears there were 58,766 suicides of males and 36,740 of females, a ratio of 62.5%. Dr. Cavan observes in this connection: "Japan, China, and India until recently each had forms of suicide which were socially approved, committed in public with ceremony, and whose omission was not only 'bad form' but cause for disgrace. The Hindu widow who burned herself on the funeral pyre of her husband or the Chinese widow who hanged herself in public may not have felt sufficiently grieved to kill herself; yet many widows in both India and China have killed themselves and been publicly honored for so doing." This practice was designated as "institutionalized" suicide, which is probably as good a term as any for a practice which has no parallel in English-speaking countries.

Before much progress can be made in developing a clear grasp of the sexual factors in suicide, a large number of individual cases require to be studied. An admirable introduc-

tion to this phase of the question is made by Szittyá in his treatise on Suicide (Leipzig, 1925). He devotes an entire chapter to the description of individual instances of suicide caused by sexuality, love and marital relation. I am not aware of any corresponding material in the English language. The cases cited clearly illustrate the extraordinary importance assumed by the sexual factor in given cases of individual emotional distress.

A rational psychoanalysis can unquestionably contribute much by way of useful suggestions for individuals on the borderland of sanity and insanity as the result of emotional disturbances having their origin in sexual aberrations. A hopeful aspect of the problem in this respect in modern times is the growing inclination of young men and women to reveal frankly to an expert investigator their problems and underlying emotional and physical conditions, without a knowledge of which, of course, all advice becomes mere platitudes, often as harmful as it is beneficial. Hope for the future lies in this direction for it is only a complete knowledge of all the facts that can guide the expert in trying to extricate a struggling soul out of the chaos of conflicting conditions and emotions inseparable from the complexities of modern civilization. F. L. H.

SWINBURNE, ALGERNON CHARLES (1837-1909), English poet. The erotic poems of Swinburne, which appeared for the most part during 1865-66, are now museum pieces that record a dead revolt and a dead scandal. They afford, nevertheless, reliable documentary evidence of pathological tendencies, which still make Swinburne's personality of sexological and psychological interest.

Extraordinary in outward appearance and in mentality, the young Swinburne gained an extensive private reputation for latent genius long before the British public was aware of his existence. A spiritual fledgling of the pre-Raphaelite group, his early work was handed about among men and women of advanced taste, who predicted a great future for the poet. The freshness, the fire, and above all the super-fluency evident in all

of Swinburne's better productions revealed an unquestionable talent.

These qualities were very effectively concentrated in the classical tragedy, *Atlanta in Calydon* (1864) with which Swinburne brought himself into prominence. Although the drama adhered faithfully to the rigid discipline of the Greek tradition, its stately progress was vivified by a sweeping and sententious eloquence. Eager to retain his sudden reputation, Swinburne published another poetic drama, this time more daring, entitled *Chastelard* (1865). As far as the critics and the public were concerned, *Chastelard* was not unworthy of its predecessor, while, at the same time, it contributed the useful element of spice to Swinburne's somewhat academic name.

It was the appearance of *Poems and Ballads* (1866) that precipitated the poet, his publisher, and his friends into a white-hot scandal. The first issue of the volume was suppressed and critics united in declaring that Swinburne had overreached himself. He was violently denounced for what had previously been condoned, his atheism and his sensuality. A new publisher was found for the poems, and Swinburne did not remain permanently without defenders, but he seems to have been sickened, if not cowed, by the moral storm of which he was the somewhat astonished victim.

His reaction was considerable. Seeking an ascetic restoration, he turned his poetic energies to the theme of patriotism, for which he adopted the cause of Italian unity, at that time symbolized by Mazzini. The resultant catharsis was strong but not permanent. Swinburne's poetry never returned to the fevered sensuality of the middle sixties, but his personal life continued, until 1879, to exhibit the customary ups and downs of dissipation. Swinburne was at last permanently rescued by Watts-Dunton, whose superior will drew the notorious rebel into a life of placid seclusion from which he never emerged.

The openly sensual strain in Swinburne's earlier verse was a bold affront

to the official asexuality of Victorian literature. The following stanzas are an example, even to-day, of a somewhat febrile imagination:

*By the hunger of change and emotion,
By the thirst of unbearable things,
By despair, the twin-born of devotion,
By the pleasure that winces and stings,
The delight that consumes the desire,
The desire that outruns the delight,
By the cruelty deaf as a fire
And blind as the night,*

*By the ravenous teeth that have smitten
Through the kisses that blossom and bud,
By the lips intertwined and bitten
Till the foam has a savor of blood
By the pulse as it rises and falters,
By the hands as they slacken and strain,
I adjure thee, respond from thine Altars,
Our Lady of Pain.*

(Dolores)

A more conventional eroticism is expressed in a short poem, yet it could not have been for that reason less scandalous to the British public of seventy years ago:

*Lying asleep between the strokes of night
I saw my love lean over my sad bed,
Pale as the duskiest lily's leaf or head,
Smooth-skinned and dark, with bare throat
made to bite,
Too wan for blushing and too warm for white,
But perfect colored without white or red.
And her lips opened amorously, and said—
I wist not what, saving one word—Delight.
And all her face was honey to my mouth.
And all her body pasture to mine eyes;
The long, lithe arms and hotter hands than
fire,*

*The quivering flanks, hair smelling of the south,
The high, light feet, the splendid supple
thighs*

And glittering eyelids of my soul's desire.

(Love and Sleep)

If a sensual tendency, which was nevertheless normal enough, shocked Swinburne's public, it is easy to understand the added uproar that greeted the perverted sexuality likewise to be found in *Poems and Ballads*. There is no present evidence that Swinburne was an active pervert of any type whatever, but his poetry offers numerous examples of the sadistic and the masochistic approach to sexual delight which have a strongly personal, although not necessarily autobiographical, quality.

The masochistic point of view is evident in these lines:

*—O Sweet,
Had you felt, lying under the palms of your
feet,
The heart of my heart, beating harder with
pleasure
To feel you tread it to dust and death...
(Triumph of Time)*

The sadistic rôle is assumed by the poet when he writes:

*Ah that my lips were tuneless lips, but pressed
To the bruised blossom of thy scoured white
breast!
Ah that my mouth for Muse's milk were fed
On the sweet blood thy sweet small wounds
had bled!
That with my tongue I felt them, and could
taste -*

*The faint flakes from thy bosom to the waist!
That I could
Thy breasts like*

(Anactoria)

The same sadistic function is made still more evident in the following:

*I would find grievous ways to have thee slain,
Intense device and superfix of pain;
Vex thee with amorous agonies, and shake
Life at thy lips, and leave it there to ache;
Strain at thy soul with pangs too soft to kill,
Intolerable interludes, and infinite ill:*

* * * * *

. . . . O that I

*Durst crush thee out of life with love, and die,
Die of thy pain and my delight, and be
Mixed with thy blood and molten into thee!
Would I not plague thee dying overmuch?
Would I not hurt thee perfectly? not touch
Thy pores of sense with torture, and male
bright*

*Thine eyes with bloodlike tears and grievous
light?*

*Strike pang from pang as note is struck from
note,*

*Catch the sob's middle-music in thy throat,
Take thy limbs living, and new-mould with
these*

*A lyre of many faultless agonies?
Feed thee with fever and famine and fine
drouth,*

*With perfect pangs convulse thy perfect mouth,
Make thy love shudder in thee and burn afresh,
And wring thy very spirit through the flesh!
Cruel? but love makes all that love him well
As wise as heaven and crueller than hell.*

(Anactoria)

The ultimate question, as to whether Swinburne can be judged a true masochist or sadist from what is revealed in his poetry, is a matter for the

trained psychologist to determine if such evidence is thought to be adequate. Several attempts have been made in this direction, but they are, on the whole, unconvincing, even to the layman. Swinburne's more important biographers do not assert that he was sexually perverted in practice, yet they all feel the need of pointing out that his imaginative life carried him far into the field of the pathological. Such related facts as Swinburne's keen interest in the works of the Marquis de Sade, and the accounts we have of his fixation on surf-bathing, which seems to have given him violent pleasure-plain experience, are available for what they may be worth.

That an unusually close functional relationship between pain and pleasure was fundamental to Swinburne's mind, there can be little question. The French biographer, Georges Lafourcade, stresses the point heavily, and he goes on to say that Swinburne consciously developed this tendency in himself. Its reflection in his poetry should be obvious to any reader. It is likewise plain that he exploited these paired reactions extensively in the field of sexual love. Nevertheless, the usual warning should be given that one must not assume the main body of Swinburne's work to be erotic, unless viewed from an extreme Freudian position. It can be said, however, in line with the opinion of Harold Nicolson, that the psychic tension habitually generated in Swinburne's mind between such psychological opposites as pleasure and pain, cruelty and sacrifice, revolt and submission, hate and adoration, is responsible for much that is original and fine-grained in his poetry. It is also responsible, although Nicolson does not say so, for much that is obsessed, monotonous, and hectic. If Swinburne had not possessed a very superior intelligence and a considerable education to combine with his emotionality and his verbalizing, it is doubtful that he would now have enough strength to make his weaknesses of interest.

Samuel C. Chew, *Swinburne* (1929); Edmund W. Gosse, *The Life of Algernon Charles*

Swinburne (1917); Georges Lafourcade, *La Jeunesse de Swinburne* (1928); Georges Lafourcade, *Swinburne, A Literary Biography*, (1932); Jeannette Marks, *Swinburne, A Study in Pathology* (Yale Review, 1920); Harold Nicolson, *Swinburne* (1926); G. S. Viereck, *Freudian Glimpses of Swinburne* (Stratford Monthly, 1925).

W. M. H.

SYPHILIS, ANTIQUITY OF. The description of syphilis has changed through the centuries. We follow the trail back to mere names such as *leuce* or *tzarath*, with little or no identifying description except that it was first recognized as a skin disease advancing to the involvement of flesh and bone. So overwhelming was its character that the Greeks compared its might to the elephant and named it elephantiasis. From earliest times it is described as contagious, hereditary and incurable. The early Greeks have left us fair disconnected descriptions of the disease, and of the various lesions that constitute its different but unrecognized stages.

In the Middle Ages, it was to the care of the surgeons, not to the physicians, that most of the lesions of syphilis might fall. These surgeons were not the first to treat of venereal leprosy, but they have left clear descriptions of a disease so protean in character that they divided it into four varieties, one for each of the four humors, a disease affecting skin, flesh, and bone. It was always described as contagious and hereditary, and in some forms incurable. The contagion was traceable to venereal exposure, to air, to food, and to certain types of social contact such as nursing, (or to human milk), sleeping with, wearing the same clothing, and eating from the same utensils as the infected. There is no question but *syphilis insontium* was common during the insanitary Middle Ages, and that the disease flourished in neglected and untreated forms.

The earliest surgeries such as those of Roger and Jamerius, are brief and crude beside later and more elaborate surgeries of Guy de Chauliac and Pedro

d'Argelata. As time passed and more translations were made available from the Arabic, the same attempt at a philosophic order began to creep in, and subsequent works greatly extended the number of skin diseases, particularly those considered to be a first sign of leprosy. The names of these diseases have now fallen into disuse or if used at all do not have the same meaning. The method of arrangement of disease in these texts was characteristically regional from the head to the feet. As each region of the body from the head to the feet was under the influence of one of the 12 divisions of the zodiac, such regional consideration was of some importance.

For a disease like syphilis, characterized by stages, one is forced in the ancient works to look for now known lesions, not in a connected sequence of development, but in some characteristic regional location. The recognition of the connection of these lesions with each other, has been a slow evolutionary process of revelation. When under the name *morbum gallicum* (French disease), syphilis began to be described strictly as a venereal disease, then with but few exceptions the first writers all wrote of it as an offshoot, or form of leprosy, or as a hybrid disease arising from the mixture of the virus of leprosy with the virus of the venereal bubo.

The political disorders in southern Europe resulted in a greater flux of population. The advent of printing and all its results as a means of spreading thought, brought the disease to the surface the latter part of the 15th century in a way that had never been possible before. About this same time, widespread epidemics of typhus and typhoid made their appearance about 1483, involving the greater part of Europe. Spain had been particularly affected. Indeed in 1490 a typhus-like disease, *calentura maligna punticular*, had all but decimated the army of Ferdinand, and had swept into Zaragoza and Barcelona. All Spain was racked with pestilence from Seville to Barcelona.

It was under such conditions of pestilence that the Catholic Sovereigns of Spain signed the edict March 30, 1492, that expelled out of that country a horde of people variously estimated at from 160,000 to 400,000, homeless, destitute, and sick. Wherever they went pes-

tilence followed, so that the term, "pest of the hogs" became a bye-word for their pestilential affliction. It was also known as *febris putrida, lenticulata, punctilata*, or by some one of the names for "hot pustules" of Book iv, Fen iii, Tract 1, of the Canon of Avicenna, and which latter affections were to be the special target of Leonicensus. Almost immediately after the expulsion of the Jews from Spain, Charles VIII of France launched his campaign which ended at Naples, February 22, 1495.

The disorders that resulted in Italy, accelerated there the pestilential conditions, which now being connected with the other distresses began to be called the French disease or *morbum gallicum*. Growing out of disputes as to the name of the disease, dissertations had taken place at Ferrara a result of which was a book produced by a learned professor of that school, Nicolaus Leonicensus, and who named his book *Libellus de Epidemica, quam vulgo Morbum Gallicum vocant* (Venice, June 1497). From this time on for 200 years the disease syphilis was known as *morbum gallicum*. The epidemic was not an epidemic of syphilis, but probably predominately typhus and typhoid. The work of Leonicensus makes no pretense to describe a venereal disease. In fact his description of symptoms is very casual. Leonicensus was a hellenist, an early translator of the Aphorisms of Hippocrates. He attributed the origin of the pestilence to excessive heat and floods, which resulted in putrefactions that polluted the air, which in turn caused a putrefaction of the body humors.

The work consists of 56 pages, the first 44 being devoted largely to criticism of the dermatology and nomenclature of Avicenna and other Arabic writers. The balance of the book is devoted largely to a description of rains and floods of Europe, with an attempt to connect the existing pestilential situation with such natural causes as were set forth in the Aphorisms, and the Book of Epidemics, of Hippocrates. It was a distinct revolt against the existing theologic and astrologic doctrines of causation. But as a description of the disease itself, to use the words of Gideon Harvey (c.1640-c.1700) "he skips over the cure and forgets the symptoms."

A clearer description of syphilis had been written by the Spanish physician

Gaspere Torrella then residing at Rome in the suite of the Pope (Alexander VI). Torrella, calling the disease *Pudendagra*, describing a few case histories among pocky churchmen, makes no pretense of calling it an epidemic, or of connecting his churchmen-patients with battles or sieges incident to the invasion of Charles VIII. One can also readily recognize syphilis in the *Pustulis* of the surgeon Marcellus Cumanus, observed by him at Navarro (1495). Before the end of the century, an even better description of the disease came from the pen of the Spaniard, Francisco Villalobos (1498), who called the disease the *Pestiferous Bubas*, or *Sarna* of Egypt. Villalobos made no attempt to connect the disease with America, or Charles VIII, for the latter's operations had all been far distant from the borders of Spain.

The *morbum gallicum* of Leonicensus was described as an alhumeria, arising out of a corrupt change in the humors, by reason of unusually excessive heat and humidity of the air. As to its symptoms; "it first appears on the genitals, afterwards it spreads over the remainder of the body, accompanied with great pain." With this statement the case rests.

Around this brief and ambiguous description of a non-venereal *morbum gallicum* by Leonicensus, clusters of the delusion of an epidemic of syphilis in Europe. One reads the syllogisms of the learned Simon Pisor, a professor at Leipzig, as he deduces the conclusions that the epidemic French disease, *Mal Franzos*, resulted from some occult essence from the stars (1498). Only by some such widespread influence could he account for the widespread epidemic influences which had existed since 1483.

Jacob Grünpeck, an earlier German writer, describes the disease as resulting from astrologic conjunction of November 1484, followed by famine and pestilence which "still rules" (1496), and an eclipse of the sun occurring March 1485. Then the same year came another conjunction of planets (November

1485), in the sign of Scorpion, which controls the genitals. A description of the disease is missing. There was a great mortality, as one may judge from the spotted corpses which illustrate the work, and "we see that in 11 months, (which would take us back to October 1495), many have fallen in a long protracted state." His prayer to the Virgin Mary to protect King Maximilian, then "among the poisoned spotted Italians in Lyguria," presents an inkling of the pestilential character of the epidemic. At this time typhus, typhoid, malaria, diphtheria, scarlet-fever, smallpox, measles, syphilis, and similar contagious or infectious diseases were but vaguely distinguished, if but distinguished at all.

Before Fracastorius invented the name syphilis for his imaginary shepherd, who gave the disease its modern name (*Syphilis sive Morbus Gallicus*, Verona, August 1530), the disease had already come to be generally considered a venereal disease. Ulrich von Hutten (1519) explains, for the first seven or more years after the disease appeared in Germany, it was not spread by venereal contact, and furthermore, the symptoms then were more violent. It was generally agreed, he says, that in the beginning lakes, rivers, springs, and even seas were corrupted by some poisonous influence in the air, which was thence communicated to the bodies of animals.

Ruiz Diaz de Isla gives much the same description for his "serpentine disease" in Spain and Portugal. He says at Baeza the disease spread by washing the clothes of "galicos" in kitchen-gardens. The wash-water being sprinkled on the vegetables communicated the disease to them, principally the cabbages. Then the bubas appearing on the vegetables were spread to children at play, and even to animals. The disease spread like wild-fire. Not one town in Europe of 100 persons, but had 10 deaths from the disease. Surely a disease described as spreading in the manner of these writers was not the

treponematosi now called syphilis. Yet both these writers include in their pot-pourri of pestilence recognizable descriptions of neglected or poorly treated syphilis.

The anachronism regarding Christopher Columbus and the American origin of the disease, did not make its appearance until four decades after the discovery. This fable rests upon a statement by the Spanish historian Oviedo, that the disease was brought back from America in 1496, when Columbus returned from the second voyage, to be carried from Spain to Italy, from whence it was spread all over Europe by the army of Charles VIII. It also rests on the writings of Ruiz Diaz de Isla, a Spanish surgeon who claims that the disease started as an epidemic at the time Columbus arrived from his first voyage in 1493.

We know that Charles VIII left Naples May 20, 1495, never to return, and before Columbus returned from his second voyage. We know that Columbus did not return from the discovery of "Calicut" to Naples in 1496 as told by the influential Montanus (1554). We know there was no siege of Naples in 1496 by Charles VIII, lasting several months, during which the disease was communicated by Spanish troops. We know an edict of the Diet at Worms dated August 1495, noted prevalence of syphilis in Germany before Charles VIII left Italy. We know that Ruiz Diaz de Isla did not write his book on Serpentine Disease between 1510 and 1520, not only because he tells us otherwise, but also because he claims repeatedly 40 years of experience with the disease which would be incompatible with any such nonsense. We know that the pilot Martin Alonso Pinzon died at Palos before Columbus arrived at Barcelona, and furthermore that Columbus marched overland from Seville to Barcelona. We know that Columbus did not start on his second voyage August 1492, and that Martin Alonso Pinzon did not make his landfall at Bayonne in France. We know that an edict was

issued at Paris March 25, 1493 against persons suffering with *grossa verole*, another name for syphilis, and that this was before Columbus reached Barcelona from his first voyage.

And above all else, in the light of modern science one should reject the fable that the 44 survivors of the first voyage could spread the syphilitic treponematosi all over Europe in less than 18 months. Such a task of Hercules is incompatible with the now known biologic features of the disease.

The erudite Jean Astruc wrote a famous work on venereal disease in six books (1736). He reviews no less than 580 authors who had written on this disease since 1495. From these works he constructs certain alleged periods of development of the Venereal Diseases in Europe:

The first period from 1494 to 1515 he establishes by quoting from the work of Fracastorius, *De Contagione*, Book II, Cap. 1, *Syphilitide Morbo, seu Gallico* (1546). Here the description begins with the statement that at first the disease arose without contact with any other person. Later, it became venereal, or it might also be transmitted to an infant through nursing. Fracastorius' account then goes on to describe a disease somewhat similar to modern descriptions of yaws.

The second period, 1515 to 1526, is noted as new symptoms of the disease, descriptions of exostosis with caries of bone, as given by John de Vigo, and the venereal warts described by Peter Maynard.

The third period, 1526 to 1540, was a period when the violence of the disease showed abatement. Now he quotes from Fracastorius a new symptom, alopecia, and from Nicholas Massa and Aloysius Lobera an inguinal adenitis. (bubo)

The fourth period, 1540 to 1550, is noted as a period when the violence of the "pustules" and the gumata seemed to abate and it is marked by the appearance of a new symptom, namely a virulent gonorrhoea, which he says was for the first time described by Brassavolus (1551), Fernelius (1555), and Fallopius (1560). Why he overlooks the graphic description of gonorrhoea by his countryman Bethencourt (1527), is not apparent, except that he did not consider the disease "virulent." Bethencourt's description of the youth whose gonorrhoea spewed freely and steadily for one and a half years, would probably pass satisfactory tests for virulence in these modern times.

The fifth period, 1550 to 1610 was characterized by a new symptom attributed to Fallopius. A noise in the ears like the sound of bells!

It is useless to continue Astruc's epochs further. They are only mentioned because of the profound influence his work has had upon historians. In the light of modern knowledge to perpetuate his excusable biologic ignorance of the disease would be sheer stupidity. Not a single symptom of syphilis but what has been described by ancient Greek, Latin, Arabic writers and the medieval Christian surgeons. Astruc was intent upon washing the undeserved stain of the French disease from the escutcheon of France and in doing so he contracted a historical hemianopsia. He could only see the origin in favor of America. Toward the vision of a remote antiquity he was hopelessly blind. The bubos described by Marcellus Cumanus meant nothing to him.

In the days of John Hunter (1728-93) the pot-pourri of venereal disease was still considered as a single entity, based on the manner it was usually spread and the parts where it made its first appearance. Chancroid was but vaguely distinguished, and Hunter regarded the difference between chancre and gonorrhea on the basis that the chancre was the venereal virus implanted on a "non-secreting surface," and the gonorrhea was the venereal virus implanted on a "secreting surface."

Great changes in the conception of venereal disease began to take place after Benjamin Bell brought out his *Treatise of Gonorrhoea and Lues Venerea* (1793), in which he clearly differentiated the local character of gonorrhea from the constitutional lues venerea. Following this Balfour, Ricord and others offered confirmatory experimental evidence, and established gonorrhoea and syphilis as two distinct entities, a view that had prevailed in ancient times, and until Brassavolus utilized it as a symptom to construct his 223 varieties of venereal *morbum*

gallicum. A final evidence of the specific nature of gonorrhea was established by Neisser (1879), by discovery of the gonococcus.

Until almost recent times chancroid, like gonorrhea, had been considered under the comprehensive title Venereal Diseases. Nicolaus Massa, and George Vella before him, had described the suppurating bubo of the penile sore as a symptom of *morbum gallicum*. This view remained unassailed until 1851, when Bassereau, a pupil of Ricord, established a clinical difference between the well known hard and soft sores, in that the hard sore was usually followed by so-called constitutional symptoms, whereas the soft sore was usually followed by no other complication than a suppurating bubo.

Although this view was not new, it came at a time when the whole aspect of disease was viewed from a new angle, and experimental proof—some of it rather sad—was being utilized to establish the separate character of the diseases. Some years later a further distinction between the two sores, now designated chancre and chancroid, was established by the discovery of a specific streptobacillus in the soft sore by Unna and Ducrey (1889). Since the more general use of the darkfield in examining these sores, in the Navy at least, chancroid has shown a dropping incidence, and the clinical distinction alone which pertained many years has not seemed so dependable.

By the middle of the 19th century a vast change had been taking place in the whole field of medicine. Although there was as yet no science of bacteriology, nevertheless, upon clinical grounds, the whole heritage of medicine was recast. Slowly out of the pot-pourri of fever and pestilential conditions had emerged typhus, typhoid, diphtheria, scarlet-fever, malaria, measles, now entirely disassociated from all humoral pathology. Neurological and mental diseases though described from earliest times now shared in this progress. Mental diseases particularly, had long

been considered too hopeless to require much other consideration than a cruel restraint or a despairing neglect, but were now being studied and put into some sort of order.

Tabes dorsalis, a name in use since the time of Hippocrates had been applied vaguely to sexual weakness supposed to come from sexual excesses, and was now acquiring a new meaning. Duchenne (1859), introducing the name locomotor ataxia, had connected the disease with syphilis, but the value of his work became obscured in controversy. Erb (1875) again directed attention to the connection between the two diseases, which was confirmed by Fournier's work in France, and Gower's work in England. The brilliant Fournier extended his investigations to General Paralysis of the Insane, and was soon able to show that from 70 to 90 per cent of those afflicted had an antecedent history of syphilis. His work, *Les Affections Parasyphilitiques* revealed such a close relationship between the two, that they might be considered merely diverse expressions of the same disease.

The discovery of the *Treponema pallidum* in the brain of these paretics by Moore and Noguchi, 1913, seemed to complete the chain of evidence, and fix the condition definitely within the field of a syphilitic manifestation. Where we might find these conditions in medical literature of past centuries is a problem. Infamous degenerates like Caligula, as suggested by Admiral Butler, furnish historic evidence of the parietic type. Other strange degenerates among those Roman Emperors described by Suetonius, might be studied with profit and perhaps a different evaluation of their oddities.

Aneurysm, a disease known since remote time, has long been considered a result of *lues venera* by Paré (1575), Lancisi (1724), and Morgagni (1761). Hardly had the treponema of syphilis been discovered (1905) before it was demonstrated in a case of congenital aortitis by Weisner (1905), in the wall of the aorta by Reuta (1906), Benda (1906), Schmorl (1907), Wright and Richardson (1909), as well as by many other distinguished investigators.

Vast changes have occurred since 1497 in the comprehension of syphilis. So much more

exact is our knowledge of the disease to-day, that a good deal of the prejudiced history of the disease must be rejected to conform to our modern conception. No two events have contributed more to our present understanding of the disease than the discovery of the parasite causing it, and the serologic test that denotes its invasion of the human body. Early in the 20th century Fritz Schaudin (1905) discovered the parasite causing syphilis, and now called *Treponema pallidum*. About this same time was established the beginning of an experience with serological blood tests, first devised by Wassermann (1906), since, improved and modified by other investigators. These two tests have now come to occupy so important a place in diagnosis, that many of the early looked-for, and once considered essential symptoms, are now often missed from the clinical picture.

Thus the symptomatology of syphilis has been variously estimated in the passage of time, although the character of the treponematoses and its consequences has probably been little influenced by man's efforts and achievements in the solving of its mystery. In a time of distressful pestilence out of a pot-pourri of diseases emerged *morbum gallicum*, at first frankly a non-venereal affection, then this metamorphosed into the *Lues Venera*, from which was to emerge the three diseases: syphilis, chaneroid, and gonorrhea. More recently on both clinical and laboratory evidence a new interpretation has been placed upon ancient cardio-vascular diseases and on several neurological conditions which are now gathered into the fold of the exhibits of syphilis.

Jean Astruc, *De Morbus Veneris* (Libri Novem); W. R. Bett, *A Short History of Some Common Diseases* (1934); Iwan Bloch, *Der Ursprung der Syphilis* (Jena, 1901); Rother B. Clay, *Medieval Hospitals of England* (1909); Hieronymus Fraecastorius, *De Contagione et contagiosis Morbis*, trans. by Wilmer Cave Wright (1930); Grünpeck (*Joseph Grünpeck and his Neat Treatise*, 1496, etc., trans. by Merrill Moore and Harry C. Solomon, Brit. Jour. of Venereal Diseases, January 1935); R. C. Holcomb, (a) *Christopher Columbus and the American Origin of Syphilis* (U. S. Naval Med. Bulletin, Oct. 1934); (b) *Ruiz Diaz de Isla and the American Origin of Syphilis* (Medical Life, Nov. 1934); (c) *The Antiquity of Syphilis* (Medical Life, June, 1935); E. Jeannelme, *Histoire de Syphilis* (1931); Aloysio Luisino, *Aphrodisiacus, sive De Lue Venerea* (Tome II, 1566-7); Montejó y Robledo, *Congreso Internacional de Americanistas* (Actas 4th. Reunion, 1881. Tome I, p. 334 to 416. Madrid, 1882); J. Earle Moore, *The Modern Treatment of Syphilis* (1934); Antonio Hernandez Morejon, *Historia de la Medicina Española* (7 vol., Madrid, 1842-52); Martin Fernandez Navarrete, *Collecion De Los Viajes y Descubrimientos Que Hicieron*

Por Mar Los Españoles (V. Tomes Madrid, 1825-37); Gonzalo Hernandez Oviedo y Valdes, (a) *Sumario de la Natural Historia de las Indias*, 1525 (Biblioteca Autores Españoles, Historiadores Primitivos de Indias); (b) *Historia Natural y general de las Indias Islas y Tierra Firme del Mar Oceano* (Seville, 1535); William Allen Pusey, *History and Epidemiology of Syphilis* (1933); Ruy Diaz de Isla, *Tratado contra el mal Serpentino: que Vulgamente en España es llamado bubas* (Seville, 1539); Karl Sudhoff and Charles Singer, *Earliest Printed Syphilis Literature, being 10 Tractates from the years 1495-1498* (Florence, 1925); Joaquín de Villalba, *Epidemiología Española* (2 vol., Madrid, 1802).

R. C. H.

TAJ MAHAL, a monument to married love erected in the 17th century (1631-48) at Agra, India. Barren women visit Taj Mahal in pilgrimage, for the mausoleum commemorates a mother of many children. Taj Mahal has been repeatedly proclaimed the most beautiful structure on earth.

"Agra spells Taj Mahal and Taj Mahal represents the noblest and most magnificent monument to love. Merely to see it is worth a trip around the world. Taj Mahal is undoubtedly the most inspired work of art ever executed by the human hand. Compared with it, the shining marble of the Cathedral of Milan appears cumbrous and the Dome of Cologne is awkward. All other mausoleums in the world, including the pyramids, shrink in comparison with its grandeur. The most perfect creations of all artists in this world for the glorification of love—and what creative perfection was not born of love's glorification?—can not do justice to this edifice before which even the most skeptical critic stands in speechless wonder." This is the testimony of ——— as a prelude to the story

Once upon a time there lived in India the Emperor Akbar the Great, wise and beloved ruler, who reigned for fifty years. Akbar's son and successor, Jahangir, was a drunkard whose harem consisted of not less than 6000 women of all nationalities. One of his wives, Johd Bai, gave birth to the Prince Kurhum who ascended the throne after Jahangir's death, and as Shah Jahan became the Grand Mogul and Emperor of India.

Prince Kurhum had married Mumtaz Mahal (The Favorite of the Palace).

Up to his ascension to the throne, she bore him thirteen children: eight sons and five daughters. He loved her immeasurably for she was as kind as she was beautiful and as beautiful as she was intelligent. In the second year of Shah Jahan's reign a rebellion broke out in his realm. Shah Jahan led his troops to the encounter with the enemy. Mumtaz Mahal accompanied her husband, and in a tent on the battlefield she gave birth to her fourteenth child and died of puerperal fever in the bloom of her life.

Shah Jahan's grief was boundless. For many weeks he refused to see any one, and according to the story, he kept the vow he had made, never to touch a woman as long as he lived. At first he wanted to abdicate and divide his realm among his sons; later, however, he decided to erect a monument to his wife, the like of which the world had never seen or ever would see. Many say he had made this promise to his wife on her deathbed. For seventeen years, it is said, twenty thousand men worked every day; for this vast army of masons a special city had to be built bore the name Mumtazabad; for the building of this memorial Jaipur yielded its finest marble of delicate rose and yellow hue; precious stones were brought from Persia and from all India, from Ceylon to the Himalayas. The cost of the monument rose to the enormous sum of twenty million dollars.

Shah Jahan spent much time in the enchanting garden surrounding the dream-like memorial to his love. Then on a journey to Delhi he became ill. His son Aurangzeb had but the wish that his father would die, so he could bury him at his mother's side and ascend the throne. When Shah Jahan recovered, Aurangzeb seized the throne. He had all his brothers murdered and imprisoned the father in the fortress of Agra.

Here Shah Jahan lived with his favorite daughter, Jahanara, who renounced marriage to follow her father into captivity. From this cell, and

from the marble terrace surrounding it, Shah Jahan was able to rest his gaze upon the Taj Mahal—glittering in the distance, mirroring its reflection in the calm surface of the Jumna river; and when his sight tired from gazing into the distance, he could contemplate the reflection of his love-memorial in the numerous mirrors fastened to the corner pillars of his marble cell. Thus he saw the Taj Mahal in ever-changing light—in sunshine and in moonlight, until his dimming eyes gathered in for the last time the vision of his creation, the altar to his love. Then Shah Jahan was buried at the side of his beloved wife. This is the story of Taj Mahal.

Caldwell Lipsett (*Encyclopædia Britannica*, 1910, 381-82): "From the marble terrace which surrounds it rise four tall minarets of the same material, one at each corner. The Taj has been modelled and painted more frequently than any other building in the world, and the word pictures of it are numberless. But it can only be described as a dream in marble. It amply justifies the saying that the Moguls designed like Titans and finished like jewellers. In regard to color and design the Taj ranks first in the world for purely decorative workmanship; while the perfect symmetry of its exterior once seen can never be forgotten, nor the aerial grace of its domes, rising like marble bubbles into the azure sky."—Magnus Hirschfeld (*Die Weltreise eines Sexualforschers*, 1933, 253-56).

TEETH, SEXUAL DIFFERENCES

IN. In the human race the teeth of males and females differ chiefly in size. This difference cannot be determined by the casual observation of a few isolated specimens of human dentitions because of the wide variations in both sexes of any given race and the differences of stature in the races of man. Sexual differences, however, become obvious in the study of a large number of specimens from one homogeneous population group. Although the differences are sufficiently slight to remain obscure in any but a statistical analysis they are nevertheless of evolutionary significance.

Sexual differences in the teeth of homo sapiens are only a vestige of sexual dental differentiation in Man's simian ancestors, for in all sub-human

primates the male dentition is marked by a rugged masculinity. The degree of sexual differentiation in the human dentition can best be judged by its comparison with those of contemporary anthropoids. In the anthropoids the dominant sex-linked character is the relatively larger cuspid tooth of the male. This cuspid difference is most marked in the gorilla and orang and is least marked in the chimpanzee. According to W. Mijsberg the difference between male and female cuspids also exists in some of the primitive races of Man. In his work on the teeth of the Javanese he observes that the cuspid shows the greatest metrical difference of all the teeth. In the anthropoids there is also a marked sex difference in the lower molars as was demonstrated by A. Hrdlička. This difference is greatest in gorillas and oranges, less in the chimpanzee, and least in man.

In man's rise from the lower primates his dentition has suffered considerable de-differentiation. Instead of well defined structural differences between incisors, cuspids and premolars there is a tendency for these teeth in Man to acquire a uniform design. The resultant is a condition referred to by W. K. Gregory as *polyisomerism* (many similar parts). The de-differentiation of the dentition is not only manifest in the morphological convergence of pattern but also in the eradication of sexual differences.

The metrical differences between human male and female teeth are present in all races. From the general sex difference in weight and stature one would naturally expect that male teeth are on the average larger than female teeth. This fact is confirmed by every metrical investigation of the human dentition. W. A. Mijsberg noted that in the Javanese the "mean dimensions of all the teeth in the males are greater than in the females."

O. Janzer, in his report on the islanders of New Pommern, says that "the average breadth and thickness of all male teeth are greater than in the

TEETH, SEXUAL DIFFERENCES IN

UPPER								
	1ST MOLAR			2ND MOLAR			3RD MOLAR	
	NUMBER OF SPEC.	LENGTH	BREADTH	NUMBER OF SPEC.	LENGTH	BREADTH	NUMBER OF SPEC.	LENGTH BREADTH
Male.....	153	11.1	12.5	151	10.1	12.5	120	9.2 11.9
Female...	153	10.8	12.1	149	10.0	12.0	120	9.5 11.4

LOWER

	NUMBER OF SPEC.	LENGTH	BREADTH	NUMBER OF SPEC.	LENGTH	BREADTH	NUMBER OF SPEC.	LENGTH BREADTH
Male.....	134	11.3	11.4	135	11.2	10.8	133	11.5 10.7
Female...	146	11.6	11.1	144	11.0	10.5	128	11.1 10.4

TABLE 1
AVERAGE SIZES (MM.) OF MELANESIAN MOLARS

females, with the exception of the lower incisors, the breadth of which is the same in the two cases." The average sizes of the molar teeth of New Britain Melanians (recorded by the author) appear in table 1. This series represents a homogeneous population group from Ralûm. In every instance except the lengths of the upper third molar and the lower first molar the dimensions of the male teeth are on the average greater than those of the females. In the crown module, table 2, which is a better comparative index of the mass of the tooth, the males exceed the females in all instances except the lower first molar, in which case they are equal. With the exception of the upper third molar and the lower first molar the teeth of the females were found to be more variable in size than those of the males. (Table 3).

The lower first molar is the only tooth of the female dentition which is proportionally larger than its corresponding element in the male dentition. The fact that the lower first female molar is both the least variable and disproportionally large for its sex, supports the observation made by A. Hrdlička in 1923 that this tooth has retained primitive characteristics. "Man shows in general a rather primitive, relatively long M_1 in the females,

which is much less the case in apes. This is well reflected in the crown index of these teeth which as a rule is smaller in the females than in the males in Man, but is smaller in the females of some species while equal or larger in other species, in apes." (Tables 4 and 5).

The belief is held by some odontologists that the congenital degeneration or absence of the upper lateral incisor is a sex-linked phenomenon. This is difficult to either prove or disprove because of the slim chance of the contemporaneous existence of three or four

UPPER

	1ST MOLAR	2ND MOLAR	3RD MOLAR
Male	11.8	11.3	10.5
Female.	11.4	11.0	10.4

LOWER

	1ST MOLAR	2ND MOLAR	3RD MOLAR
Male.	11.3	11.0	11.1
Female...	11.3	10.7	10.7

TABLE 2
CROWN MODULE (BREADTH+LENGTH)
MELANESIAN MOLARS

UPPER

LOWER

	1ST MOLAR	2ND MOLAR	3RD MOLAR	1ST MOLAR	2ND MOLAR	3RD MOLAR
Male.....	4.82	6.03	8.82	4.96	5.61	6.87
Female....	5.32	6.51	8.25	4.66	5.86	7.27

TABLE 3

COEFFICIENT OF VARIATION: LABIOLINGUAL DIAMETERS
MELANESIAN MOLARS

generations of the same family all with sound permanent teeth. A. Schultz reports one such case in which the tendency to the elimination of the lateral incisor is found only in the females. Schultz refers to this, however, as

UPPER

	1ST MOLAR	2ND MOLAR	3RD MOLAR
Male.	112.6	123.8	129.4
Female..	112.0	120.0	120.0

LOWER

	1ST MOLAR	2ND MOLAR	3RD MOLAR
Male..	100.0	96.4	93.0
Female..	95.7	95.5	93.7

TABLE 4

CROWN INDEX $\left(\frac{\text{BREADTH} \times 100}{\text{LENGTH}} \right)$

MELANESIAN MOLARS

LOWER 1ST MOLAR		LOWER 2ND MOLAR	
HUMAN FAMILY AFTER HRD- LICKA	MELANE- SIAN	HUMAN FAMILY AFTER HRD- LICKA	MELANE- SIAN
Male..	98.3	100.9	8.1
Female.	95.8	95.7	97.7

TABLE 5

COMPARATIVE CHART OF CROWN INDEX

"most unusual." It is quite probable that the occurrence of the character only in the females in this family tree is a coincidence. Schultz cites several other pedigrees in which the degenera-

tion of the lateral incisor manifests itself in both males and females at what appears to be sporadic occasions which bear no relation to Mendelian order or sex-linkage.

A. Hrdlička, *Dimensions of the First and Second Lower Molars with their Bearing on the Pitted Jaw and on Man's Phylogeny*, Amer. Journ. Phys. Anthropol., April, 1923; *Variations in the Dimensions of Lower Molars in Man and Anthropoid Apes*, Amer. Journ. Phys. Anthropol., Oct. 1923.

A. Schultz, *The Heredity Tendency to Eliminate the Upper Lateral Incisor*, Human Biology, Feb. 1932.

M. R. S.

THEOSOPHY AND SEX-PROBLEMS. Matters connected with sex and the abuse of the so-called procreative function have attained an entirely unmerited prominence or notoriety in the modern world for the simple reason that any philosophical knowledge on the subject is largely based in our time upon medical experimentation and the shaky foundation furnished by certain branches of modern psychological study.

It would not seem too much to say that there is no real sex-problem in so far as Nature herself is concerned and her normal functioning regarding man's being, but that the problems—and they seem to be all too numerous in our modern world—arise, as above hinted, entirely out of the fact that the modern West no longer believes in the controlling sanctions of its one-time religion; and because it has no widely accepted philosophy of life there are, of course, no controlling or inhibitory factors of a philosophical character.

Modern man looks upon the function of sex, or rather the procreative act, only incidentally as a matter of racial importance—i.e., for the propagation of

the human species—and almost entirely as an avenue for sensuous if not actually sensual indulgence.

In the Religion-Philosophy of the Ancient Wisdom which in modern times is called Theosophy the present division of the human race into two sexes is looked upon as—stated in brief—an evolutionary phase in the steady unfolding in growth of humankind. Humanity was not created as man and woman, but was in the beginning of the history of the human race asexual or sexless, if the word be preferred; and it was only during the slow progress of the development of the human characteristics now so familiar to us all, that the asexual condition slowly merged into the androgynous state, which, after long millions of years, in its turn gave place to an unfolding into the condition of the two sexes which now prevails and has prevailed for some six or seven million years past.

The Esoteric Philosophy teaches a slow and gradual evolutionary unfolding, from within outwards, of the human race from the first appearance of the human protoplasts on this globe as parthenogenetic beings propagating their kind after a virginal manner, through—at a much later stage in geologic time—the hermaphroditic or rather androgynous condition, which again, after long ages, slowly merged into and finally became the man and woman of opposite sex of the present day and of millions of years past, as stated above.

It needs but a glance of the observant botanical and zoological mind into the different creatures of the lower orders and classes and genera which exist on earth today to see that even among these early, although specifically evolved, forms, both parthenogenesis and hermaphroditism are as well established, even at present, as is the sexual method of racial propagation. Both in the kingdom of the Plants as well as in the kingdom of the Animals are still to be noticed these primeval forms of propagation which now survive as hold-overs;

and it is curious that in either kingdom—i.e., in both kingdoms—may be found examples of all three methods of reproduction, in each kingdom the highest being the sexual, then on a somewhat lower scale the hermaphroditic with probably far fewer individuals, and last the virginal or parthenogenetic.

In man himself there still survive both zoölogic and physiologic remnants or hold-overs, as, for instance, the imperfectly developed *mammæ* in man as also the equally imperfectly unfolded uterus; and, *mutatis mutandis*, the same observation applies to woman. All too little importance has been ascribed to these still surviving but persistent if imperfectly developed vestigial organs and if they proclaim anything at all, they point with some violence to a past condition, the androgynous, when the human race was, as individuals, double-sexed, or bi-sexual.

It is to be remembered that the true human individual is not his physical body, which is but the vehicle or gross material integument in which the Real Man works and through which he manifests himself; for it should be obvious to any thinking person that the Real Man is neither legs nor arms, skin nor hair, bones nor tissues, but (a) Mind, (b) the delicately balanced emotional apparatus commonly called the psychological nature, and (c) the lofty spiritual and high ethical instincts, all which, in their aggregate union, form the true human being. In other words, man is not merely an animate “robot,” but a thinking, self-conscious, morally conscientious and feeling, being.

From the foregoing statement, however, it should not be misunderstood that the Theosophical teaching is based on the philosophical dichotomy first formally introduced into European philosophical and scientific thought by René Descartes: i.e., that the “soul” is one thing, and the body in which it manifests or lives is something else and disjunct and of different essential nature from the indwelling consciousness.

Quite to the contrary of this, the

Esoteric Philosophy, Theosophy, teaches that the physical body of man is but the expression in the material world of the characteristic and strongly defined inner powers or energies alluded to above as composing the Real Man. It is this Real Man, the inner and invisible being composed of thought and feeling and consciousness, which evolves through the ages, by unfolding from within itself the latent powers, attributes, faculties, characteristics, which it draws from the spiritual part of the Man's high essential nature, much as the rays streaming from the sun draw their *raison d'être* and their characteristics from the solar heart. In other words, man is not separate from the Universe in which he lives and moves and has his being, as Paul of the Christians put it, but is an integral and inseparable part of the Cosmic Source from which he draws all that he is.

From this prime philosophical fact, which is to-day so accordant and concordant with the statements of the foremost men of ultramodern science, such as Eddington, Jeans, Planck, Bohr, Einstein, and others—to the effect that the essential “stuff” or fundamental thing in the Universe is “Mind” or “Consciousness”—the reason of the statement made in the preceding paragraph starts instantly into clear outline, and it is seen that as the essence of man is therefore “mind” or “consciousness” derivative from the Universe, man is substantially and fundamentally consciousness or mind throughout all his being, both in those invisible element-principles above alluded to and in their very partial expression as his body in the material physical world. Just as a plant in the springtime throws out from within itself the characteristics of its inner life expressing itself in verdure or foliage, flower, bud, and fruit, or as the germinating egg unfolds from within its own substance the being, be it chick or man, which later is to become the evolving entity in this physical world—all coming from within—just so is Man the Invisible the real being and

his body is merely his material expression on the physical plane.

Thus it is that evolution proceeds from within outwards, it being the inner or Real Man who evolves, and his body, irresponsibly and as it were automatically, through the cycling ages expresses in partial measure in the physical world the manifestations of the unfolding or evolving attributes and powers within. Thus man at one time was asexual because his inner and partially unfolded characteristics were asexual, so to speak; in a subsequent geological age he was hermaphroditic or rather androgynous, because the inner or Real Man had unfolded this aspect of latent attributes; and in a still later age appeared sex in its two present and opposite forms in the human body, being the evolutionary expression on the physical plane of the bifurcated lower psychology of the inner or Real Human Being.

Sex, therefore, as stated above, is a passing evolutionary phase, a phase of the unrolling of inner characteristics, which the human race in its present evolutionary development is passing through, but which phase, in its turn, in future ages, will be succeeded by some condition as yet scarcely to be defined.

The consequence of this philosophical and scientific postulate is that sex *per se*, outside of any opinions that individuals may hold about it, is a perfectly natural, normal, and it may be said even necessary, stage or step in the evolutionary growth of the human race. Therefore, in itself, sex has nothing evil about it, nor is it a necessary sign of a present degraded condition of being.

Sex is an evolutionary fact. In itself it is neither wicked nor unnatural, nor was it brought into function because the two supposititious distant ancestors of the human race ate of a forbidden apple. Any problems connected with sex, therefore, arise not out of sex itself, or the sexual function itself, but solely out of its abuse, which is equivalent to saying its use in a manner contrary to the clean and unsoiled fol-

lowing of this one of Nature's processes, the sole right purpose of which is the propagation of the human race.

All the "problems" of sex, therefore, as just shown, arise from abuses of a perfectly natural function, innocent in itself, and necessary for the continuance of the human species. Such abuses spring almost universally from ignorance—ignorance of natural law, and that particular and perhaps worst kind of ignorance arising in lack of reflective thought. In our modern day, the sanctions of religion, as stated above, have largely lost their hold over men and women with respect to this wholly natural and proper function, when not abused and when used solely for the purposes for which Nature destined it; and also—and there is no need to mince words in the matter—the so-called problems have arisen largely on account of the wholly erroneous, because mistaken, teaching and consequent mistaken deductions of a former generation or two of scientific men who, being entirely of materialistic bias, believed and taught that man was his body and nought else.

If a man is taught that he is but a more evolved beast, a higher species of ape, and that when he dies that is the total end of him and of all of him, he naturally says to himself: "Why not enjoy life while I have it? Why not use every function that Nature has given to me in the manner that is most pleasing to emotion and passion?" There are here no inhibitions of a moral kind; there are here no illuminating spiritual insights; there is here no philosophy upon which a decent-minded man can lean; and the result is that it is now common in the world to look upon the sexual function either as something disgraceful, or, on the other hand, as something not to be used solely according to natural law, but as a means of sensual gratification.

From the standpoint of Theosophy, the Esoteric Philosophy or the Ancient Wisdom of all past ages and of all races of men, the sexual function is Nature's provision for the continuance of the

human race, and in consequence its only permissible use is that, and that alone. Anything more than this is as much an abuse and therefore as apt to bring about disease, both psychological and physical, as would be the case of the abuse of any other of the functions of the body. If a man drink himself to death, or gluttonize himself into disease, or womanize himself into imbecility, everyone can see that the unfortunate practiser of these immoral perversions of Nature's provisions for health or propagation is a victim of ignorance or of lack of ordinary reflexion.

The so-called sex-problems, therefore, do not arise in any innate wickedness in the human race but solely out of ignorance and because the ancient teaching, so simple and easily understood, has been forgotten. Any abuse of the body will bring about its corresponding degenerative disease, or, in the least evil cases, decay and premature senility. It may be as well to state clearly that the body is so amazingly and beautifully balanced that the abuse of any of its functions will bring about disharmony in the physical structure, or equivalently imperfect response of all other organs of the human frame.

Sex in the present human physical vehicle really serves two purposes: (a) first and most important, the continuance of the human family; (b) second, the strengthening and building up of the human body as a whole, and of all its tissues and organs as particulars, by the retention therein of the vital sex-essences.

Sex-problems, so-called, which so afflict and harass modern men and women really originate in childhood. Parents themselves are wofully ignorant of the simplest facts of even their own physical frame. Teach a child from the time that it is able to understand words, something, in a cleanly, decent manner, of the nature of the sexual organs and their proper function; teach it that any abuse whatsoever of the functions of sex brings about sooner or later degenerative consequences not only as regards

general health, but as regards all the organs of the body, including those of the sexual nature; and the child will learn to have respect not only for the function but for himself as an intelligent unit of the human race.

It is perhaps too much to hope in these days of nervous tension and moral slackness that the sexual function will be used solely for the purposes for which Nature has evolved it, as above stated; so that possibly for ages hence the function will be misused even in marriage for purposes of merely sensuous gratification; but let it once become clearly understood among men and women of normal character that any use whatsoever of the function entails consequences, and that abuse of the function entails disastrous consequences leading to degeneration, and ordinary good sense and the instincts of self-protection and self-preservation will in time attain increasing influences in these human relations.

At least, an enormous amount of good could be done in the world and a great deal of human misery in many walks of life be avoided, and probably some of the most horrible diseases known to medical science could be stamped out, if human beings once were to grasp and have their imaginations captured by the simple natural facts outlined or hinted at in preceding paragraphs.

Furthermore, it is sheer stupidity to imagine that the human race, so obviously as individuals inseparable and integral portions of Nature herself, can separate themselves from Nature, whether in act or in thought; and if this primal verity were once grasped it would be seen that many diseases, and at least certain forms of insanity, and the widespread because thoughtless sexual immorality in the world, are largely the results or consequences of ignorance of the need of following Nature's monitory warnings in the use of the function of sex.

The meaning is: the procreative act is not solely brought about by the union of two beings of opposite sex; this is but

the physical mechanism; conception and the consequent growth of the embryo are to a certain large extent dependent upon cosmic and meteorological factors, concerning which, alas, modern science in all its branches is in Cimmerian darkness; but with the amazingly rapid strides forwards that scientific research and investigation are making, it is earnestly to be hoped that this utter darkness may before long be enlightened by some rays of a larger acquaintance with Nature's interlocked and interblending laws, energies, and substances.

To particularize: No marriage, provided the best health of the child-to-be is hoped for, should ever be consummated during the fortnight comprised between the full moon and the new moon; furthermore, no procreative act should ever take place when the mother-to-be is either unwilling or physiologically in a non-receptive condition; in other words, the periodic menstrual function should enter into consideration.

Furthermore, in view of the cyclically annual risings of the generative forces of Nature, it would be extremely wise to have all procreative acts take place during the early spring when the forces of Nature are unfolding after the winter sleep, when vegetation is burgeoning, and when all life feels the new and rising impulse of the vital flow. So well was this known in ancient times that the month corresponding to late January and early February among the Attic Greeks was called *Gamelion*, from the Greek word *gameo*, to marry, and *Gamelion* was the fashionable month for marriages. One may well ask oneself: Why?

To summarize: The remedy for all sex-problems, so-called, is, as hereinbefore stated, instruction, beginning with little children, in the nature of sex and its function, and the proper uses thereof as contrasted with its abuse and the consequent penalties inevitably following upon Nature's violated laws. Indeed, the only original "sex-problem" that the present writer is cognisant of is the curious compound of human ignorance of natural laws and consequent abuse thereof.

Here, then, is the true problem and the only real one that the present writer sees, because it is the fundamental cause of all the social misery, of the immoral conditions, and of the common and heartless indifference to the pitiful spectacle afforded us by overcrowded insane asylums and over-burdened hospitals—the problem is, as said, ignorance and stupidity. Correct these by proper instruction about simple facts of the human body and the penalties of abuse of natural law, and ninety-nine per-cent. of the so-called “sex-problems” will before long vanish.

There will then remain a relatively minor “problem” to be dealt with by the individual: that already stated as being the mutual or social self-indulgence to the detriment of health, under the marriage-vow. Even this last perversion of one of Nature’s important and innocent functions will largely disappear when increasing consciousness of the dangers attendant upon its abuse grows greater.

H. P. Blavatsky: *The Secret Doctrine* (1888); *Isis Unveiled* (1878); *The Key to Theosophy* (1879), and various articles in the magazines *The Theosophist* and *Lucifer*, during the years 1879 and 1891.

G. de Purucker: *Theosophy and Modern Science* (1930); *Fundamentals of the Esoteric Philosophy* (1932); *Occult Glossary* (1933); *The Esoteric Tradition* (1935); and various articles in the magazines, *The Theosophical Path*, *Lucifer* (American issues), during the years 1929–1935. Also *The Theosophical Forum*. *The Mahatma Letters to A. P. Sinnett*, from the Mahatmas M. and K. H. (transcribed and compiled by A. T. Barker) 1923.

G. de P.

TINGEL-TANGEL, the lowest class of variety theater in Germany, where some of the prostitutes sing and entertain, while others drink with the visitors, chiefly sailors.

Iwan Bloch (*The Sexual Life of Our Time*, 1907): “Who is not familiar with the most celebrated tingel-tangel streets in the world, the Spielbudenplatz and the Reeperbahn, in St. Pauli, near the docks of Hamburg?”

TRANSPLANTATION, TESTICULAR AND OVARIAN. A vast amount of experimental and clinical research upon the possibility and practicability of transplantation of the gonads (testicle in the male and ovary in the female) has been done within the past quarter of a century. The gonads are glands of internal secretion having most important functions in the organism apart from the primary function of procrea-

tion. Indeed, it seems likely enough that we are not yet in full possession of all the effects of the gonadal secretions, as new facts are coming to light each year. The loss of such secretions in the economy of the organism is a matter of the greatest importance and hence the significance of attempts to supply them from some other source by transplantation, when the organism itself cannot be utilized for such supply. In this short review I am presenting the main facts in regard to the possibility and results of transplantation of the testicle and ovary—*gonadal transplantation*.

I. TESTICULAR TRANSPLANTATION (THERAPEUTIC GONADAL IMPLANTATION)

From the earliest times it has been considered that the secretion of the testicles—the semen—besides its power in procreation, was in some way, associated with the brain and responsible for the characteristics which comprised *virilism* or *manliness*. But these properties were associated with the semen as a whole. The celebrated John Hunter (*A Treatise on the Venereal Disease*, 1786) was the first to distinguish the secondary or distinctive sex characters of the male as something quite independent of the primary reproductive function.

It is now generally accepted that the testicle is an endocrine or internally secreting gland, and that from the structures that compose it there are at least two main secretions, although on this latter point there is still some divergence of opinion. Some maintain that the sperm cells of the testicle are concerned, not only with *spermatogenesis* (production of sperm cells) and the elaboration and ejection of ripe spermatozoa capable of impregnation of the female, but that the sperm cells also prepare and discharge into the blood and lymphatics certain substances which act as hormones and are directly responsible for the appearance and maintenance of the secondary male sex characters as well as for sexual desire (*libido*) and potency. Others say that

the sperm cells of the testicle are concerned with spermatogenesis and the procreative faculty alone and attribute to the *interstitial cells*, or as they are called, the *Leydig cells*, a distinct glandular secretional function responsible for sex characters, desire and potency.

There is no doubt that the testicular secretion is a very complex fluid. Some men have strong sexual desire and are quite potent in performing the sexual act; but their seminal discharge does not contain spermatozoa. They are incapable of procreation. On the other hand, there are those who for various reasons are neither desirous of nor capable of performing the sexual act. Such individuals, to a greater or less degree, show a deficiency of the physical and psychic characters of a normal man.

I take the position that the spermatogenic cells exist quite apart from and exercise a different function from the interstitial cells, which Leydig first described (1854), and which exist in the midst of the connective tissue, between the seminiferous tubules of the testicle, containing substances which give them the character of glandular cells. Ancel and Bouin, following very extensive researches, showed (1904), that in mammals the *interstitial testicular tissue* is a true gland of internal secretion and that it alone exercises on the organism the function of determining male sexual characters which had hitherto been ascribed to the testicular secretion as a whole. The secretion of the Leydig cells plays no part apparently in procreation which function is reserved for the sperm cells alone.

The greatest strength was given to Ancel and Bouin's findings by Steinach (1912), whose experiments showed that the sex elements degenerated while the interstitial elements increased and that male sexual puberty was dependent upon the internal secretion of the interstitial cells which he termed the "puberty gland." However, the interstitial internal secretional theory has not gone unchallenged. Such a powerful protagonist as Voronoff of Paris and his co-

adjutor Retterer among others have opposed it. Their view is that the epithelial cells of the seminiferous tubules, when they become transformed into reticulated tissue, furnish a plasma the absorption of which with the organism determines secondary sex characters. That is to say, that the seminal elements alone and not the interstitial cells are alone responsible for sex characters. Personally, I do not subscribe to this view. I believe that it has been amply and sufficiently proved beyond doubt that the Leydig cells secretion is a hormone responsible for secondary sex characters. As shown in my book, *The Human Testis* (1924), I am convinced that neither the seminal nor the so-called Sertoli cells play any part in the production of sexual potency, or in libido or in the production of secondary male characteristics.

But however interesting these considerations may be, we must proceed to discuss the subject proper of this paper—testicular transplantation.

It is manifest that whenever, from any cause, the testicle itself or its function may be lost, the human male, if within the life cycle of sexual activity, is in a sorry plight. He lacks, and it is usually evident from his appearance that he lacks, the ordinary attributes of a male. If his testicles are completely lost he is a eunuch or a castrate. The point is then to see if science can do anything for him to substitute for the loss of these organs. Fortunately, as we shall see, science has been able by the method of testicular transplantation to substitute one of the important functions of the testicle, that is, to supply by this means the secretion which is responsible for sexual desire, potency, and for the maintenance of the male sex characters as distinct from those of the female sex.

Berthold, of Göttingen, was the first (1840), to transplant the testicles from four cocks from their normal site into the abdominal cavity. The transplanted organs lived and the male characters of the animals were preserved. In animals

from which the testicles were removed, the male characters gradually disappeared. Berthold's experiments were repeated by several others in different animals with more or less success.

The mode of transplantation may be of three types: (1) *auto-transplants* in which, as in Berthold's experiments, the testicles of an animal may be transposed to some site in the same animal different from their normal site; (2) *homo-transplants*, in which the testicles of an animal are reimplanted in another animal of the same species, the site of implantation being a matter of indifference; (3) *hetero-transplants*, in which the testicular transplantation is between two animals of different species.

Following the experimental auto- and homo-testicular transplants by Berthold and his successors, the next important advance was by Steinach who transplanted ovaries into young castrated male rabbits and who found that the mammary glands (breasts) of these animals hypertrophied and that they looked and acted like females. Steinach also made similar transplants from males to females, and Knud Sand (1914-17) made a series of homoplastic transplantations from male to female and from female to male castrated animals. He even produced experimental hermaphroditism, after prior castration, by simultaneous transplantation of testicular and ovarian grafts in the same animal. In such instances, he observed bisexual psychosis.

Voronoff reported upon a series of experimental animal testicular transplantations (1917-20). He first experimented with homotransplants in young castrated bucks, the graft being made in the scrotum. Next, in old rams which were senile, weak and sexually impotent. In many of these cases the animals regained vigor and sexual potency. There was, undoubtedly, a restoration of lost power.

Testicular Transplantation in Man

The practicability of successful homo- and hetero-testicular transplantation in

man having been established, there only remained the questions of the indications for such an operation and the perfecting of the technique, and I now give the indications for testicular transplantation:

(a) *Loss of the testicles*, owing to injury or to pathological conditions arising from diseases such as tuberculosis, cancer, extensive suppuration, etc. Here the indication is clear cut and the greatest possible good may be done by testicular transplantation.

(b) In cases of *premature senility* depending upon endocrine dysfunction, in which sex gland transplantation, supplemented, if necessary, by other endocrine gland transplants and, if need be, by special opotherapy, may frequently give surprising results.

(c) In *sexual neurasthenia*, due primarily or secondarily to endocrine dysfunction.

(d) Occasionally, in various *psychoses of puberty* resting on an endocrine basis.

(e) In *Froehlich's syndrome* (adiposis genitalis), when combined with hypophyseal therapy.

(f) In certain cases of *impotency*, especially those not dependent upon organic or constitutional disease or disease of the central nervous system.

(g) In properly selected cases of *eunuchoidism* and *infantilism*.

(h) In certain forms of *homosexuality*, especially before the ingraining of homosexual tendencies has occurred.

(i) Finally, in cases of *hypo-development of the genitalia* in young individuals; in all cases of *testicular dystrophia* and malfunction from any cause, and often in the so-called *male climacteric*.

It need scarcely be said that it would be unjustifiable and unscientific to proceed to a testicular transplantation without a most thorough physical examination of the patient and arrival at a diagnosis based on one of the above causes. The physician making the diagnosis must be satisfied that the patient's condition would be improved by the discharge of testicular hormonal fluids into his blood and lymph channels.

Technique. The success of a testicular transplantation greatly depends upon a number of technical factors; the site of implantation; the surgical procedure followed; the age of the implant; the condition of the implant at the time of operation; finally, the blood relationship and affinity between the donor and recipient.

Other things being equal, a testicle should be implanted into a well-vascularized area so that it may live, become rapidly vascularized and function by secreting. A site should be selected in which the transplants will not be easily exposed to injury. The scrotum and abdomen may be selected but personally I give preference to the retrorenal space (between Gerota's capsule and the endo-abdominal fascia). Regarding the surgical procedure, a whole or half testicle may be used. What I term the "lantanizing" method of treating the transplant on its insertion is, I believe, the best method of insuring its rapid vascularization. This method is fully described in my work, *The Human Testis* (1924). It is best to use testicular tissue taken from a young healthy individual. The operation of removing the testicle and transplanting it into the recipient should, if possible, be done at the same time; but, if this is not possible, then the tissue should be kept in a refrigerator at or about the freezing point of water for a period not exceeding 96 hours.

Results of Human Testicular Transplantation

The first attempt at transplantation of the testicle in man made in the United States (or elsewhere so far as I know) was by Hammond and Sutton (1912). This was in a young man whose testicles had been removed on account of sarcoma (cancer). The homotransplantation method was employed and the implantation made in the scrotum, the vessels of the graft being sutured to the vessels of the spermatic cord from which the original gland had been severed. The graft apparently lived and func-

tioned for a considerable time. Lydston (1914) made a free testicular auto-transplantation on himself. He was satisfied from his experiment, which was done to get first-hand knowledge of the constitutional effects of such grafting, that continuity of hormone production for at least a long time is certain.

Since these early attempts there have been many testicular transplantations in man carried out by various operators in different countries. Mostly these were homotransplantations, but, owing to the difficulty of obtaining human material and since the publication of Voronoff's results with transplantation of testicles from ape to man, this type of transplantation has greatly superseded heterotransplantation. Heterotransplantation has been a failure in the past mainly because there is too great a biologic difference between the donor and recipient of the graft. The blood of the higher anthropoid apes has a very close affinity to the blood of man and other biologic differences are slight. The transplantation of testicles from such animals to man is *prima facie* more likely to be successful than transplantation from any other animal and, clinically, it has been found to be so.

I have personally done a large amount of preliminary experimental work on this type of transplantation and from my studies I concluded that testicles could not only be successfully transplanted from the higher apes to man but vice versa. I reported a number of histological proofs that such grafts, when implanted under proper conditions and technique survived for a considerable period (up to two years or even more) and became well vascularized within their new home. The information thus acquired has been used by me in clinical practice in a large number of cases.

It has always been one of the misfortunes of medical science that real progress was exploited and abused in the hands of the over-zealous or of charlatans. It has taken nearly one hundred years of research, since Berthold's first experimental animal testicular transplantation to the present position in which it can be described as a practical surgical clinical procedure in certain

cases. Unfortunately both the lay press and charlatans have vaunted it as a method of "rejuvenation," making it appear as a method of restoring old age to youth. It is nothing of the sort; no surgical method whatever can make old degenerated tissues young; but where physical and mental vigor have been lost before their natural time of decay considerable improvement may be obtained by properly selected cases, proper material and appropriate technique.

I emphatically object to the term "rejuvenation" which does not describe what is really done and is misleading to the laity who get the impression that the old can be made young. I suggested many years ago the term "*Therapeutic Gonadal Implantation*" for substitution of the sex organs from one individual animal or man to another who has lost his own.

II. OVARIAN TRANSPLANTATION (THERAPEUTIC GONADAL IMPLANTATION)

Ovarian transplantation may be carried out by one of three methods: First, the ovary may be transplanted either in whole or in part from its natural site in the human or animal body to any other site in the same body. This is known as autotransplantation or autograft. Second, an ovary, in the whole or in part, may be transplanted from one individual to another of the *same species*, a procedure known as homotransplantation or homograft. Third, an ovary in whole or in part, may be transplanted from one individual to another of a *different species*, a method which is called heterotransplantation or heterograft. There is no surgical technical difficulty in removing and transplanting an ovary in any one of these three ways, nor is there any particular danger in the operation. The only question is: Will the transplanted ovarian tissue live or die in its new home and, if it lives, will it function there, that is to say, will it act in its new position or in its new host in the same way as a normal ovary does in a human being or in an animal?

Let us look at the functions of the ovary. The first and by far the outstanding function of the ovary in the female is to store up ova or eggs and to liberate them at certain periods so that by intervention of the male the ovum might become fertilized and pregnancy and reproduction occur. The manifest primary biologic function of the female is to act as a reproducing agent to continue the species. Without the normally acting ovary, placed in its proper position in regard to the other agents in the generative system, reproduction is impossible.

But the ovary has another function quite apart from reproduction. In certain of the tissue cells which make up the ovary there is constantly being manufactured, or secreted, fluids called hormones which are discharged into the blood of the female and carried by it to all parts of the female organism. The ovary is an endocrine gland and its special secretion produces in the female all those qualities which are summed up in the word feminism, that is to say, those physical and psychical peculiarities which characterize and differentiate the female from the male. That this is so is proved by many facts, especially that it is possible by continually charging the blood of a castrated male with the ovarian secretion either to neutralize the special masculine characteristics or to supplant them by female characteristics.

This point will be dealt with later on. Suffice it to repeat here that, apart from the primary functions of ovulation and reproduction, it is to the secretion of the ovary that the special secondary sex characteristics of the female are due. When the ovaries are completely removed from any female, or when they are so diseased that they lose their power of secretion, the female characteristics begin to regress.

Moreover, there is naturally and normally a period in the life cycle of a female when she ceases to be capable of bearing offspring. In the human female we call this the "change of life" or the menopause. It usually occurs between the fortieth and fiftieth year. The profound physical and psychical changes which then occur are due to changes in the secretory powers of the ovary. Possibly, all secretory powers are not lost but those associated with

active primary sexual phenomena are presumably lost and notably the secondary sex characteristics begin to wane.

When, in a female, well within the age limits of the active sex cycle, the ovaries are removed or become functionless, then there occurs what is known as the "artificial menopause" and such is always accompanied by the same physical and psychic changes that mark the onset of the true menopause; in fact, in such conditions the psychic and neurotic symptoms are often accentuated.

We can now return to the question of transplantation. In this we are not, of course, so much concerned with ovulation and reproduction as these functions are usually completely lost when the ovary is entirely dissociated from its proper place in the generatory system; but we are deeply concerned with the question of preservation of secretory power when ovarian tissue is transplanted. The whole object of ovarian transplantation is to substitute a functioning secreting ovary for one that is lost, because, when this secretory power is preserved and the transplanted ovary continues to add its specific secretion to the blood, then the secondary female characteristics will continue to be present.

Ovarian Transplantation in Animals

Autografts.—Knauer (1895) successfully transplanted free ovaries from one site to another in the same animal. By this it is meant that the transplanted ovary in its new position was dissociated from the genital tract, where it anatomically belonged, and that it continued to secrete in its new site. These first experimental autografts were soon followed by a number of others by different investigators. Thus, Long and Evans made nineteen autotransplantations in rats, placing the transferred ovary in various locations in the body. In fourteen of these the grafted ovary survived and functioned. It was even found by some workers that when a free ovary was transplanted into the uterus pregnancy could and did take place.

Homografts.—Early work (1901) by Foa and others showed that homo-

transplantation of ovaries could be successful, though not to the same extent as in the case of autotransplantations. The literature showed quite clearly that sometimes pregnancy followed ovarian homotransplantations in animals from which their own ovaries had been removed. There is, however, considerable difference of opinion with regard to the functional results obtained from ovarian homografts as compared with autografts. Some investigators found that with special technique homografts were successful. The site chosen for the transplant and the technique of implantation have everything to do with the survival and function of the transplant. Ovarian homografts may be made in male castrated animals and in certain such experiments by Steinach and Sand, the males became feminized as regards secondary sex characters.

Heterografts.—As a general rule, attempts at heterotransplantation of ovaries in animals have been failures. There is reason to believe that this is due principally to difference in biologic relationship. When, however, there is a close blood relationship in the species, of both donor and recipient of the graft, the possibility of successful heterotransplantation seems to be more assured. I shall return to this point in more detail later.

The general conclusions to be drawn from the literature dealing with experimental ovarian transplantation in animals are: (1) that autografts commonly survive and show secretory activity; (2) that homotransplants are less successful than autografts, success being in general a matter of technique; (3) that heterografts commonly fail both as regards survival and functioning of the graft except in certain conditions.

Ovarian Transplantation in the Human Subject

Morris (1895), after removing the ovaries and fallopian tubes from a young woman, transplanted a piece of human ovary to the stump of one fallopian tube. This woman became preg-

nant a month later, thus proving that the transplanted ovarian tissue ovulated. Such autotransplantation, but without being followed by pregnancy, has been repeated by a number of investigators commonly with success, but the technique of autoplasmic and homoplasmic free ovarian transplantation has varied.

In 1928, the writer reported upon 44 personal cases of human ovarian homotransplantation. Thirty-six (36) of these patients were traced and about 60 per cent of those, who on account of the loss of their own ovaries had suffered from exaggerated psychic and neurotic symptoms, reported that they had been completely restored to health. The other patients were more or less ameliorated. In 5 of these patients there happened to be an opportunity to examine the condition of the implanted ovary from one to four years after its implantation; in 4 cases the graft was found still in the original site, but although diminished in size, it was apparently surviving and well vascularized. My opinion, based on these cases and others carried out since that report, is that human ovarian homotransplantation is a practical surgical procedure which has definite indications with a fairly well established degree of durability of results.

Norris and Behney (1929) reported on 31 autotransplantations of ovarian tissue in human subjects. They found that the majority of such implants "take," namely, they live and become vascularized but that they do not survive more than two or three years.

The clinical symptoms that may be expected to be observed in young women suffering from insufficient functioning of the ovaries are: first, menstrual disturbances, namely, delayed and abnormally infrequent menstruation, scanty menstruation, or absence of menstruation; second, premature menopause with its vasomotor, neurotic, and psychic symptoms; third, sterility; fourth, repeated abortion; fifth, obesity. To these may be added, in the case of sexually immature females, delayed puberty and

genital hypoplasia and, in other cases peculiar headaches associated with menstrual disorders, and possibly sexual frigidity.

When the clinical observations are such as to leave little or no doubt that they are due to hypo-ovarian function, an ovarian homotransplantation, if possible, is indicated.

There are many factors which enter into successful implantation. These are principally: (a) the site of implantation; (b) the surgical technique followed; (c) the age of the implanted ovary; (d) the condition of the implant at the time of operation; (e) the blood relationship and affinity between the donor and recipient of the implant. All these factors must be taken into consideration in connection with the fundamental conditions upon which survival of the implanted ovary and its functional activity depend, that is to say, its successful vascularization and the degree of activity of its germinal epithelium. If the transplantation is to be functionally successful, proliferation of the germinal epithelium must begin soon after vascularization of the grafted ovary is definitely established.

Site of Implantation.—While an ovarian implantation will usually be successful in many situations, yet there are certain preferential sites, especially those which are naturally richly vascularized. In animals, successful ovarian transplantations have been made into and upon the surface of the kidney. In my own work on testicular transplantation, as already described, I found that implantation in the retrorenal space (between Gerota's capsule and the endo-abdominal fascia) was the most suitable. This technique is fully described and illustrated in my book on *The Human Testis*. I have used this space also in my experimental studies and in many of my clinical cases of human ovarian transplantation. It is thoroughly effective from the standpoint of vascularization; it is practical, simple and offers no danger to the patient.

Technique.—It is best, if possible, to

operate simultaneously on the donor and recipient; but in transplanting an ovary from a human subject this is not always possible and then it is necessary to have recourse to preservation of the removed ovary by refrigeration. In my refrigeration experiments, extending over a period of a year, I found that good results were obtained only, as a rule, when the time of refrigeration of the transplant did not exceed 96 hours and the temperature was about the freezing point of water.

Condition of the Implant.—It has generally been considered best if the transplant be obtained from a young donor. A whole or half an ovary may be employed. Of course the implanted ovary must be in a healthy and functioning condition. An infantile ovary may be used.

Blood Relationship and Affinity.—In dealing with testicular transplantations, I pointed out that the success of organ and tissue transplantation varies directly according to the difference in blood affinity between the donor and recipient. The nearest approach to affinity to human blood is that of certain anthropoids. The remarks made on this score in regard to testicular transplantation also apply to ovarian transplantation. Of course, there is no question of affinity in the case of homotransplantations, but the matching of the bloods of the donor and recipient is important. Both should be of the same blood group.

By personal experiments, conducted over a series of years, I have proved that it is possible to transplant ovarian tissue from the higher anthropoid apes to the human subject and that such transplants, when properly executed, will live and function. The blood affinity between these animals and the human subject is very close and the operation is, therefore, akin to a homotransplantation. It is also possible to transplant human ovarian tissue into the same species of animals following castration, and one series of my experiments dealt with such transplantations into macacus rhesus monkeys. The "taking" of such

grafts, and their vascularization, as well as survival, in one case for a period of eleven months, was proved histologically. There is, so far as I know, no other such histological proof of a like transplantation recorded in medical literature. For full details with illustrations of this result I must refer the reader to my previous writings on this subject.

With regard to the time of survival of animal and other ovarian transplants, Knauer and Steinach reported the autotransplant survival for three and one-half years respectively, and Mauclair and Nattras saw such transplants living for eight and nine and one-half years after implantation in the human subject. In my own clinical homotransplants they were found to exist for periods varying from one to four years after transplantation.

No claim is made that ovarian transplantation of any type is of permanent value. At best, after a time, perhaps a few years, the transplant will disappear, it may then be replaced by another; but while it survives the transplant may fulfil the endocrine functions, or at least some of them, of the natural ovary. The indications for such a transplantation or for its renewal are well known and must be judged by the physician. They are sufficiently outlined in the body of this paper.

In closing, I will repeat what I have said in dealing with testicular transplants regarding classifying ovarian transplantations as "rejuvenation" procedures. All such designations are detrimental to true surgical progress. They offer opportunities to quacks and delude and mislead the gullible public. There is no such thing as rejuvenation in the accepted sense. However, ovarian, like testicular transplants, do unquestionably improve naturally waning physical and psychic conditions in young castrated women, or in those whose ovaries do not function normally owing to disease or other cause; in such cases transplantation is a worthwhile therapeutic method.

John Hunter, *A Treatise on the Venereal Disease* (London, 1786); P. Ancel and P. Bouin, *Sur les cellules interstitielles du testicule* (C. R. Soc. de Biol., Paris, 1903, lv. 1397); E. Steinach, *Verjungung durch exper. Neubelebung*, etc. (1920); Voronoff and Retterer (Jour. d'Urol. med. et chir., Paris, 1922, xiv 81); Max Thorek, *The Human Testis* (1924); Berthold, *Transplantationen der Hoden* (Arch. f. Anat. u. Physiol., 1849, p. 42); K. Sand, *Handbuch d. Norm. u. path. Physiol.* (1825, ch. xv, 251); S. Voronoff (Rev. de Chirurg., Paris, 1919) and *Greffes testiculaires* (lvii, 697, Paris, 1923); Hammond and Sutton (Internat. Clin., 1912, xxii, S. I. 150); G. F. Lydston (New York Med. J. 1914, C. 745); E. Knauer (Centralb. l. f. Gynack., 1896, xx, 524); J. A. Long and H. M. Evans, cited by Lipschutz in *Die experimentellen Grundlagen der Eierstocksverpflanzung* (Budapest, 1930); C. Foa (Arch. ital. de biol., 1901, xxxv, 327); R. T. Morris, *Lectures on Appendicitis* (1895, p. 156); Max Thorek (Illinois Med. J., 1928, liv. 389); K. Sand (Jour. de physiol. gen., 1921, xix, 315); C. C. Norris and C. A. Behney (Surg. Gynec. and Obst., 1929, xlix, 642); Max Thorek, *The Practicability of Ovarian (Auto-Homo- and Hetero-) Transplantation with Histologic Proof*. (Endocrinology, July-Aug., 1930, xiv, 265-281); P. Mauclair (Bull. Soc. anat. de Paris, 1923, xcii, 167); I. Nattras (Brit. Med. J., 1923, i, 1051).

M. T.

TUTULUS, a Roman woman's head-dress formed by piling her hair in a cone. At times the tutulus was plaited up to remarkable heights, and the female slave who dressed her lady was in peril of life if a single hair went wrong. The tutulus corresponded to the *corymbus* or elongated knot, roll or tuft into which the young Greek women gathered their hair. The flaminica (wife of the flamen, or special priest of Jupiter) invariably wore a tutulus braided with a purple band in conical form; she was prohibited from combing or arranging her hair in the argei or chapels (Aulus Gellius: *Attic Nights*, x, 15).

Lucan (*Pharsalia*, ii, 358): "the matron, wearing on her head a towered crown."—Juvenal (*Satires*, vi, 503): "So important is the business of beautification; so numerous are the tiers upon tiers piled one after the other upon her head!"

TWINS AND SEX. *Categories of Twins.*—The term "twin" has been used in a variety of senses. It is most

commonly used for the production of plural offspring in species that typically give birth to but one offspring at a time, as in man, in most other primates, in cattle and in sheep. In man twins occur in about one out of 88 pregnancies, triplets in about one out of 88², and quadruplets in about one out of 88³ pregnancies. This progression of frequencies is known as Hellin's Law. Quintuplets and sextuplets also occur in man, but no higher numbers of offspring at one birth have been authentically reported. In cattle, twins are somewhat rarer than in man. In sheep of some races, twins and triplets occur in thirty or forty percent of births, though in most races twins are relatively rare.

A second situation is found in some other animals, notably the small hairy armadillo, *Euphractus villosus*, in which twins are the rule and single births relatively rare. In this species, although the twins are enclosed in a single chorion, they are as frequently of opposite sexes as of the same sex, a fact that indicates that the members of each twin pair are derived from two separate fertilized eggs implanted close together.

A third category of twins is found in species that exhibit specific polyembryony, the production of several offspring from a single zygote. The best known and most thoroughly worked out cases of this phenomenon are those in two species of armadillos, *Dasypus novemcinctus* and *D. hybridus*. In the former monochorial quadruplets are produced at nearly every birth, rarely triplets and quintuplets. In the latter the numbers of offspring in a litter range from 7 to 12, the most frequent number being 8, twice that in *D. novemcinctus*. In both these species all the members of any given litter are of the same sex. The embryonic history of *D. novemcinctus* was worked out by Newman and Patterson and that of *D. hybridus* by Fernandez. Both of these studies, carried out independently and simultaneously one in Texas and the other in the Argentine Republic, demon-

strated that each litter is the product of an early division of a single zygote to form several embryos.

A fourth twin category consists of cases in which sporadic twinning occurs in species that are multiparous, as in swine. Here two types of monochorial twins occur: monozygotic and dizygotic. The monozygotic twins are very rare, but are characterized by having a common yolk sac, having all their fetal membranes arranged with mirror-image symmetry, and both being of the same sex. The dizygotic twins are called twins by courtesy only, simply because they consist of a pair of individuals enclosed within a common chorion that has resulted from the fusion of adjacent chorions. They are equally often of the same and of opposite sexes and are quite unsymmetrical in their membrane relations.

A fifth twin category includes a large number of egg laying invertebrates and vertebrates in which an occasional egg undergoes twinning so as to produce wholly separate monozygotic twins or only partially separate twins or double monsters.

A sixth and final category that may seem rather far removed from twins, but which is undoubtedly related to the phenomenon of twinning, is that of specific polyembryony as exhibited by many species of parasitic hymenoptera. These insects lay their eggs in the embryos or eggs of other insects. It is known that a single fertilized egg goes through an elaborate process of splitting up into varying numbers of polygerms, ranging from two to several hundred, each polygerm giving rise to a separate individual. All the progeny derived from a single zygote are of the same sex.

Two Fundamental Kinds of Twins.—In all these cases of twins and multiple births there are but two kinds from the standpoint of their origin: those derived from a single zygote and those derived from two or more zygotes. These two kinds have been designated by various authors as respectively unioval and

dioval, one-egg and two-egg, *monozygotic and dizygotic*. We shall use the last mentioned terms.

The Relation of Twins to Sex.—The study of twins has contacts with the study of sex at two main points. Monozygotic twins have been important in furnishing evidence for the genetic theory of sex determination, while certain types of dizygotic twins have furnished evidence for the hormonal control of sex differentiation.

Twins and Sex Determination.—Long before the chromosomal mechanism of sex determination was discovered identical twins in man and polyembryony in the armadillos and in parasitic hymenoptera had all been used as evidence that sex was determined early in development, if not actually at the beginning of development. As early as 1861 Galton had suggested that identical human twins were derived from a single zygote and had concluded that, on this account, sex was determined in the undivided zygote. Von Ihering in 1885 and 1886, on the basis of a study of two sets of fetal armadillos in which all members of a litter were enclosed in a common chorion and were of the same sex, assumed that sex was determined in the undivided zygote. Several writers during the last part of the nineteenth century had described polyembryony in parasitic hymenoptera and had also claimed on the basis of their studies that sex was determined at the beginning of development. All of these observations paved the way for the discovery of the chromosomal mechanism of sex determination early in the present century by McClung and others.

Twins in Man.—In his earliest writings Galton recognized that in man there exist two distinct kinds of twins: *identical* and *fraternal* twins. He was convinced that the former were derived through the early division of a single zygote, while the latter were derived from two separate zygotes. This view met with no objection for a long time, but when certain investigators, notably Thorndyke in 1905, began to use twin

material for a study of the nature-nurture problem, it was found by no means a simple task to diagnose all twins as members of one or the other type. Thorndyke gave up the task as a bad job and concluded that all twins belong to a graded series and are probably all dizygotic. Several other students of twins have come to the same conclusion. In recent years, however, many students of twins including Siemens, Verschuer, Dahlberg, Weinberg, Newman and others have reaffirmed the view that there are two distinct kinds of twins from the standpoint of their zygotic origin.

Evidences for this conclusion come from three sources: *a*, The armadillo situation proves that monozygotic twinning readily occurs in mammals and there are many special features of development peculiar to man and the armadillo; *b*, there are many cases of reversed asymmetry in identical twins that can not be explained on any other grounds than that one twin is derived from the right half and the other from the left half of a single embryo; and *c*, the statistical study of sex ratios in twin pairs. This last type of evidence is not only crucial for the question of the actual existence of monozygotic twins in man, but has a very definite bearing on general problems of sex. Hence it deserves special emphasis.

Sex Ratios in Twins and the Question of Monozygotic Twins in Man.—Crucial evidence that identical twins are actually monozygotic (from one zygote) is derived from statistical studies of sex ratios in twins. From the standpoint of sex distribution within pairs of twins there are three possibilities: they may be both male ($\sigma\sigma$), both female ($\varphi\varphi$) or one male and one female ($\sigma\varphi$). If no monozygotic twins exist the numbers of same-sexed pairs and opposite-sexed pairs should be equal, the result being the same as in tossing pairs of pennies. Extensive data taken from census reports show that the proportions of same-sexed and opposite-sexed pairs are far from equal. One body of data will

illustrate this point. J. B. Nichols, using data derived from United States census reports, has given us the following numbers of twin pairs according to sex classes:

SEX OF TWINS

Frequency of occur- rence	$\varphi\varphi$	
	234,497	264,098
		219,312

This ratio is approximately 1 $\sigma\sigma$: $\sigma\varphi$: 1 $\varphi\varphi$, whereas if no monozygotic twins were present, the ratio should be 1 $\sigma\sigma$: 2 $\sigma\varphi$: 1 $\varphi\varphi$. Obviously then the excess of same-sexed pairs over opposite-sexed pairs must represent the numbers of monozygotic pairs. In other words, there would be 189,611 monozygotic pairs among a total of 717,807, or a little over 26 per cent. Numerous other masses of similar data collected in Europe confirm the conclusion that about one quarter of all twins are monozygotic. The dizygotic pairs (derived by the simultaneous fertilization of two ova by two sperms) should be, and are, of two types, same-sexed and opposite-sexed in approximately equal numbers.

Another piece of evidence that identical twins are derived from a single zygote arises out of the fact that conjoined twins (such as Siamese twins), which are obviously derived from a single embryo which has undergone incomplete separation, are invariably both of the same sex in a pair and are almost as similar, though not quite, as are separate identical twins. Separate identical twins and Siamese twins are regarded as belonging to the same series, but Siamese twins seem to have begun the twinning process too late to be able to complete it.

There seems to be no question today that there are two kinds of human twins, monozygotic and dizygotic. It is, however, occasionally somewhat difficult to distinguish one type from the other. The opposite-sexed pairs may be considered unquestionably dizygotic, but

the same-sexed pairs are a mixed lot. In practise, it is found that over 90 per cent of the cases are either so strikingly similar that they are at once diagnosed as monozygotic, or so entirely different that they are readily diagnosed as dizygotic. The remaining ten per cent require careful study. There will be a few "identicals" that differ more than one would expect in individuals genetically identical, and there will be a few "fraternals" that resemble each other more than one would expect in individuals that differ genetically. Careful detailed study involving dozens of comparisons including palm and finger prints and other personal minutiae, seem to resolve all difficulties. The more experienced specialists now claim that there is no good reason for mistakes in diagnosing the two classes of twins.

Dizygotic Twins and the Problem of Sex Differentiation.—Previous work had shown that, although the original sex tendency is imparted to the zygote through a chromosomal mechanism, the complete differentiation of secondary sex characters, in mammals and birds at least, is due to the action of sex hormones produced by the gonads. Twins in cattle have given strong support to this view. Bovine twins are relatively rare, probably occurring in no more than one in a hundred births. The twins that do occur are always mono-chorial, but some are pseudomonochorial due to the fusion of two chorions. Four types of bovine twins occur: (a) two normal males, (b) two normal females, (c) a normal male co-twin with a normal female, (d) a normal male co-twin with an intersexual type known as a *freemartin*. The exact nature of the freemartin has been for a long time a bone of contention, and it is this anomalous type that has especial interest to students of the biology of sex.

The Freemartin Problem.—The freemartin condition has been known and described for a long time. Freemartins are sterile and have been called hermaphrodites because they exhibit a

combination of male and female characters. They exhibit all grades of intersexuality ranging all the way from almost complete male habitus to almost complete female habitus, but the internal sexual accessory organs always show an intermediate condition between that of a normal male and a normal female. Such early students of the subject as John Hunter (1786), Numan (1843) and Spiegelberg (1861) expressed varying views as to the sexual condition of the freemartin. Hunter considered it a transverse hermaphrodite with varying dominance of the two sexes. Numan considered it a sterile female, but thought that the reciprocal condition of normal female and sterile male also occurred. Spiegelberg regarded it as not a sterile female, but an imperfect male. Hart (1910) on the basis of an inadequate histological examination of the poorly preserved gonads of two of Hunter's specimens, which had been fixed and preserved in alcohol for over a century, concluded that they were testicular in character and that the freemartin is a sterile male. He developed the fantastic theory that heterosexual twins in cattle are monozygotic and that one got all or most of the male elements and the other (the freemartin) little or none.

It remained for Lillie in America and Tandler and Keller in Europe to solve the problem of the sexual nature of the freemartin. Lillie was able to obtain from the Chicago stock yards abundant fetal material in various stages of development. He found that in twin pregnancies there were always two and only two corpora lutea of pregnancy. This is prima facie evidence that such twins are dizygotic, not monozygotic as Berry had maintained. He found that 97 per cent of bovine twins are mono-chorial, the condition being due to the fusion in the median part of the uterus of the chorions of twins in opposite horns of the bicornate uterus. In almost every case more or less anastomosis of chorionic blood vessels had taken place, permitting an intermingling of

blood between the twin fetuses. In every case where one twin was a freemartin this vascular anastomosis had occurred, but in some of the few cases where no anastomosis had occurred, the twins were both normal even when of opposite sexes. Evidently then the freemartin condition is the result of a mixing of fetal bloods. Since the partner of a freemartin is always a normal male, the freemartin itself must be a transformed female. This must be so, for the majority of the twins were ♂♂ or ♀♀, and both invariably normal even when there is a mixture of blood between the two individuals.

It, therefore, seems necessary to conclude that some substance carried in the blood, a hormone in all probability derived from the male, suppresses the differentiation of female characters and favors the development of male characters. The mixture of characters of the two sexes is believed to be due to the fact that fusion of chorions does not take place until after differentiation in a female direction has proceeded more or less far. The earlier the fusion the more completely is the fetus transformed toward the male condition, and *vice versa*.

A study of the differentiation of the gonads in cattle embryos showed that the interstitial tissues of the male develop precociously while those of the female fail to appear until very much later. This would mean that for a long time the only sex hormones present in cattle twins would be male hormones, a fact which goes far toward explaining why it is always the female that is modified and never the male (in spite of Numan's claim that some of the sterile individuals are males). The work of Lillie would seem to have solved the freemartin problem satisfactorily, but as recently as 1918 Magnusson, on the basis of an examination of a considerable number of juvenile and adult freemartins has come to the conclusion that Lillie is wrong and the freemartins are of monozygotic origin. His arguments are, however, somewhat illogical

and unconvincing, and we shall for the present conclude that Lillie's solution of the problem stands as one of the strongest if not *the* strongest demonstrations of the hormonal theory of sex differentiation.

The freemartin condition has been found in other ungulates, notably in swine and in goats. Hughes (1924) has described a goodly number of freemartins in swine and has found the same sort of chorionic vascular anastomosis as those described by Lillie for cattle. The main difference between swine and cattle is that the former are multiparous and the latter typically uniparous. In swine two adjacent fetuses in the elongated uterus occasionally undergo chorionic fusion as the result of crowding. Hughes also described two certain cases of monozygotic twins that were distinguished from the commoner dizygotic type by the facts that the twins were of the same sex, that they lay side by side with the heads in the same direction, that the fetal membranes, amnion and allantois, were mirror-images of each other, and that they were both attached to a common yolk sac.

Whether freemartins occur in other mammals than those mentioned is a question. Hartman described what seemed to him a case of freemartin in the opossum, but the evidence is inconclusive. It has frequently been suggested that the occasional cases of hermaphroditism in man might be freemartin in character, but the evidence seems to be against such an interpretation. Kurtius and others have by means of injections and X-ray examinations studied the chorionic circulation of monochorial human twins. In all certain cases of monozygotic twins there is more or less extensive vascular anastomosis, often involving harmful inequalities in blood exchange between the twins, but in no cases where the monochorial condition was due to fusion of two chorions was there any evidence of vascular anastomosis. The burden of this evidence points to the conclusion that in human dizygotic twins there is

no chance for a mixing of fetal bloods and hence no likelihood of one of the fetuses influencing the other through hormones carried in the blood stream. Freemartinism in man, therefore, seems highly improbable.

Homosexual Identical Twins.—Elsewhere in this volume will be found adequate discussions of the phenomenon of homosexuality. Students of this subject distinguish two main categories of homosexuality, inborn (genetic) and acquired. The former are more or less intersexual in somatic characters, i.e. they are female-like males or male-like females. The latter appear to be somatically normal but have sexual leanings toward members of the same sex. Whether either or both types of intersexuals are genetic or acquired might be studied by means of the twin method. This method, so extensively used for determining what characters are fixed by heredity and which influenced or determined by the environment, is as follows: The incidence of any character, pathological or otherwise, is studied in identical and in fraternal twins. If, when it occurs, a character appears always or nearly always in both members of identical twin pairs and rarely if ever in both members of fraternal twins, this character is adjudged to be hereditary or genetically determined. Cases in which a character is found in both members of identical twin pairs are said to exhibit concordance, while cases where it does not occur in both twins are said to exhibit discordance. Complete concordance in identical twins means complete genetic predetermination. Incomplete concordance but greater than in fraternal twins means a genetic basis for the character in question, but the expression of it is modified by differences in the environment. This is the method used so extensively by Siemens, Verschuer and others.

In a recent paper by Sanders (1934) case studies are given of ten pairs of identical twins in eight of which both members of each pair exhibited homosexuality. Thus the degree of concord-

ance is 80 per cent. Among the concordant cases the intensity of homosexuality varied between the members of a pair, but in every case the anomaly is obvious in both twins. In most of the cases the somatic characteristics of both members of a pair are distinctly less masculine or less feminine than normal. In two male cases both twins were distinctly feminine in appearance and behavior.

As to what these studies mean with regard to the genetic basis of homosexuality it is difficult to decide. Living together in such close association as do identical twins, there would be a strong urge toward mutual expression of homosexual traits if there were any genetic tendency at all in that direction. Hence it is not surprising that in most cases both twins would be involved when one is. Even with this amount of reserved judgment, it still seems probable that the true homosexual type is an intersex and that the condition has a definite genetic basis.

Twinning Hereditary or Environmentally Induced?—This question involves a number of questions regarding sex and therefore seems appropriate for the present discussion. Some authors claim that twinning is hereditary and therefore can not be environmental, others claim that it is environmental and therefore not hereditary. Doubtless both views are wrong, for it seems probable that only the tendency to twinning is hereditary and that the expression or non-expression of the tendency is due to some special environmental set-up that may or may not be present.

There can be no question as to the hereditary character of twinning (polyembryony) in the armadillos of the genus *Dasypus*, for every birth is a twin birth, but the question is as to exactly what is hereditary. In view of the fact that in these animals the early embryo, undivided and like any other single mammalian embryo, remains implanted in the uterus for two or three months, that it finally becomes implanted and soon afterwards undergoes

division into four or more embryos, suggests that arrested development is the immediate cause for twinning. The reason for a failure of the embryo to undergo placentation at the proper time seems to be tied up with underfunctioning of the corpus luteum, whose hormone is known to sensitize the uterine mucosa and to make it receptive of ova. It seems reasonable then to assume that what is hereditary in the armadillos is an underfunctioning of the corpus luteum, which later corrects itself, and that this is responsible for the failure of the interaction between embryo and uterus. Experimental work by Newman on echinoderms and Stockard on fishes indicates that any agent that causes arrested development at an early stage will produce twins and other developmental anomalies. In the armadillos then the conclusion seems justified that twinning is both hereditary and environmental.

In man there seems to be no question but that twinning is hereditary. The twinning tendency runs in families, but is not inherited according to any definite Mendelian plan. It certainly is not a simple dominant trait, nor does it appear to be a simple recessive. It seems probable that its appearance is due to a recessive gene that predisposes the mother to twinning, but also requires special environmental conditions. That some environmental factor is involved is indicated by the fact that the frequency of twin births varies with the age of mothers. Twins are least numerous in younger mothers and there is a steady increase in their relative frequency up to about 38 to 40 years.

There is a controversy as to whether the twinning tendency is inherited equally from the mother and the father. Bonnevie and Sverdrup, on the basis of extensive pedigree studies, hold that dizygotic twinning is due entirely to mothers of twins; while Davenport, on the basis of his equally extensive pedigrees, holds that fathers pass on the twinning tendency but to a less extent than do mothers. Both agree that the

mothers have more to do with it than the fathers. This would again suggest that twinning is not purely genetic, but has also an environmental basis. It may well be true that dizygotic twinning is purely due to a maternal condition and is largely environmental in ultimate cause, but that the monozygotic twinning tendency is inherited equally from father and mother, but its expression depends upon special conditions present in the mother. The problem of the hereditary and environmental basis of twinning in man is still unsolved.

H. H. N.

TYCHON. The Greek god of luck, corresponding to the goddess, Tyche; or according to some, who follow Strabo in the matter, a deity associated with Priapus; these latter would derive the name from the verb, *teucho*, and give it the sense of maker, or generator. A minor divinity.

UTERINE CHILDREN, children born of the same mother, but having a different father; for example, a uterine brother or a uterine sister.

John Aubrey (*Brief Lives*, 1669-96): "He had a uterine brother Anthony Bacon, who was a very great statesman and much beyond his brother Francis for the politiques."

VULVA, the external genitals of the female, consisting of the mons veneris, labia majora, labia minora, clitoris, urethral opening, and vaginal orifice. When the labia majora (large lips) are closed, the last four structures are invisible. The vulva is frequently called the pudendum (from the Latin *pudere*, to be ashamed); the German term for it is *weiblicher Scham* (womanly shame).

WECHSELKIND (German; modern *Wechselbalg*, *ein untergeschobenes Kind*). A changling-child, a foundling; cf. the French *champi*. Identified by the old demonologists as the progeny resulting from intercourse with incubi, i.e., offspring of the Devil. Martin Luther was accused of being a *Wechselkind*; see his *Tischrede*.

WEDDING RING. The history of the wedding ring, although it is chiefly an archeological subject, makes its con-

tribution to the sexual and the marital concerns of mankind. The various forms of the ring, its materials, its inscriptions, and the symbolic ceremonies through which it is given and received, serve to comment upon man's evolving concepts of love and marriage.

The Betrothal Ring.—The immediate ancestor of the wedding or nuptial ring was the betrothal (engagement) ring. Extant examples of the betrothal ring do not run back to the probable time of its inception, but there are quite numerous specimens of an early date. Our knowledge of them makes it evident that the ancients regarded the betrothal ring as a witness to the contract of marriage. As such, it had a purely secular significance. It was not, however, entirely devoid of personal significance, as is shown by a Greek specimen of the fourth century B. C., which carries the following inscription: "To her who excels not only in virtue and prudence, but also in wisdom." A very modern atmosphere surrounds the inscription carried by another early example—the single Greek word meaning "Honey."

The Romans are known to have used the betrothal ring as early as the second century B. C. In contrast to the Greek, the Roman rings were made of iron rather than gold. Traditionally, at least, the Romans preferred the iron ring, although they seem to have employed gold ones also. The probable fact is that the Roman citizen of means gave his betrothed two rings, which actually served the double purpose of engagement and marriage rings. The gold ring was to be worn in public (as a witness to the man's wealth?), the iron ring within doors (as a witness of his rights?).

In modern times the true betrothal ring has been supplanted by the engagement ring. The change is more than in the name because the modern engagement ring carries little, if any, of the legal or religious solemnity that attached to the earlier ceremony of betrothal, which usually involved a written disposition of the bride's dowery

and often was witnessed by a religious service. The physical nature of the ring has likewise undergone the modifications of both time and place, although such changes have tended to settle within conventional limits of comparatively long duration. In relation to the wedding ring, the engagement ring has uniformly run to greater intrinsic value and more elaborate style.

At the present time, in Christian countries, the formal betrothal is incorporated in the religious marriage ceremony, where the modern wedding ring does the double duty of an espousal and a nuptial pledge. Thus the engagement ring has returned to its ancient significance as witness to a secular agreement to marry.

The Wedding Ring.—The exact history of the development which evolved the wedding ring from the betrothal ring, can no longer be traced, but it would seem that the later form appeared in England about the time of the Reformation (the sixteenth century). Jewish tradition asserts that the early Hebrew wedding rings were of plain gold, without setting. They were permitted to be of silver, while still cheaper metals were not forbidden. It also is apparent that the Jewish wedding ring was of ceremonial or symbolic meaning only because it was so often too large for wearing.

The Christian form, on the other hand, has always been the true finger ring, usually of gold, and much of the time devoid of ornament. Although there have been many variations—in the form of double rings joined by a pivot (gemmal rings), rings set more or less elaborately with stones, and even so-called puzzle-rings, in which several independent loops were so shaped as to form together into an apparently indivisible ring—the single unadorned band has been the most common form of the wedding ring. Platinum now seems to be gaining in popularity over gold, but the expensively jeweled wedding ring is virtually unheard of.

There has been some talk of develop-

ing a *divorce ring*, which would be of the same type as the wedding ring but of smaller size for wearing on the fifth finger. So far the idea has made little progress.

The so-called *rush ring* was an early variant upon legitimate forms of the engagement and the wedding ring. There is an English record that when the ecclesiastical court ordered a marriage as a disciplinary measure for bad conduct, a rush ring or a ring made of straw was furnished for the ceremony. In the popular sense, a rush ring was the symbol of mock marriage. Like other folk usages, it found its way into literature. A Tudor ballad mentions the ring as follows:

Then on my finger I'll have a ring
Not one of rush, but a golden thing;
And I shall be glad as a bird in spring,
Because I am married o' Sunday.

Inscriptions.—Most of the possible reactions to the institution of marriage are reflected by inscriptions on betrothal and wedding rings. Many interesting ones are cited in the book on rings by G. F. Kunz. The pious attitude is well represented, a notable instance being the sentiment engraved on the wedding ring of Martin Luther and Catharina von Bora: "Those whom God hath joined, shall no man put asunder." Others include: "If God be with us, who can be against us?"; "In Christ and in Thee my comfort shall be"; "All for Jesus"; "Our unity is Christ."

A more humanistic tone appears in such an inscription as: "Two bodies and one heart," or "As we began, so let's continue." More worldly still is the sentiment—"Love him who gave thee this ring of gold, 'Tis he must kiss thee when thou art old."

The moralizing strain likewise has its representatives. "Love is sure where faith is pure." "A virtuous wife doth banish strife." "Virtue surpasses riches." "None can prevent the Lord's intent."

Sheer ardor has a place, although not a very prominent one, since the long view of marriage seems to encourage very sober sentiments. Some of the more emotional inscriptions run as follows: "In thee a flame, in me the same"; "Sue is bonny, blythe, and brown; this ring hath made her now my own"; "Desire hath set my heart on fire."

Various degrees of skepticism, of bargain driving, and, in a few cases, of complete cynicism, can be found among the collected sayings of the rings. "If I survive, I will have five" (husbands); "Ultimate Good, not present pleasure"; "For my

sake wear this, it is a manacle of love"; "Thou art my star, be not irregular"; "Thou wert not handsome, wise, but rich; 'Twas that which did my eyes bewitch." A limit was certainly reached by Bishop Cokes, who is supposed to have given his wife a wedding ring on which a hand, a heart, a mitre, and a death's head were engraved. The inscription read:

These three I give to thee
Till the fourth set me free.

Symbolism.—A great body of abstract meanings has attached itself to the wedding ring. The metal of which it is made forms a ready instance. The durability of iron once had its significance. Then came the purity and the value of gold. Recent times have carried the language of metals farther by reasoning that since gold may be termed the metal of man, platinum should be held the metal of heaven. This view may be contrasted with that of the many women of to-day who choose platinum because gold seems to them either out-moded, déclassé, or inferior as a setting for jewels.

The shape of the wedding ring has been assigned obvious symbolical meanings. As a sphere, it suggests love and fidelity, which shall be unbroken and without end.

The position of the ring, now usually worn upon the fourth finger of the left hand (most of the other fingers have been used at one time or another), once had a lively significance. It was thought that a vein or nerve in the fourth finger ran to that ancient seat of affection, the heart. The purely utilitarian argument that the fourth finger is a logical choice because it is guarded by those on each side of it, that of all the fingers it is least used, and that the left hand, as the hand less used, is the place of least wear, struggled in vain against more visionary evidences.

The use of the ring in the wedding ceremony itself has a sacred symbolism. It is not complex in the various sects of Western Christianity, but the Greek and Russian rituals have preserved a

rings (they can be the ones formerly exchanged by the couple at the time of

their engagement) are used in a richly symbolical series of exchanges executed by the officiating priest.

The wedding ring has also come to be regarded as a symbol of bondage for the man and subjugation for the woman. These concepts of servitude and inferiority doubtless sprang in part from the language of the Christian marriage ritual, which very early took hold of the traditionally secular marriage contract. The sacramental view of marriage, as a permanent spiritual union, inevitably emphasizes the surrender of freedom, and the presence of the word obey in the woman's vow to the man sounds the note of subjugation to his will. Thus the wedding ring became an objective witness of both these elements, even though early forms of the marriage service indicate clearly that the golden espousal ring was a token of the wealth the husband brought to the consummation of the marriage contract.

William Jones, *Finger-ring Lore. Historical, Legendary, and Anecdotal* (1898); George Frederick Kunz, *Rings for the Finger* (1917).

W. M. H.

WERTHERITIS, suicide caused by unreciprocated passion, especially for a married woman, after the manner of the hero of Goethe's sentimental romance, "The Sorrows of Young Werther."

Johann Wolfgang von Goethe: *Die Leiden des jungen Werther* (1774).—Louis Proal (*Passion and Criminality*, 1905, p. 328): "Werther led to a veritable epidemic of suicide, which we may call *Wertheritis*. So many were the victims of the tale that a Protestant pastor spoke of Goethe as a murderer. Mothers wrote to the author to reproach him for having driven their sons to suicide."

WORLD LEAGUE FOR SEXUAL REFORM (WLSR) had its genesis when Dr. Magnus Hirschfeld convened the first International Congress for Sexual Reform on a Scientific Basis, at the Institute of Sexual Science, Berlin (1921). Then economic and other post-war difficulties were responsible for a latent period which lasted until 1928 when Dr. J. Leunbach of Copenhagen organized the Second Congress in that city.

The League now became properly organized with Drs. August Forel (Switzerland), Havelock Ellis (England), and Magnus Hirschfeld (Germany), as Honorary Presidents; and an International Committee consisting of members representing England, the United States of America, Canada, Germany, France, Russia, Austria, Switzerland, Czechoslovakia, Italy, Holland, Belgium, Spain, Japan, Norway, Sweden, Denmark, Iceland, Latvia, Egypt, Liberia, Argentine, Chile, British India, and Federated Malay States. At this Congress the League expressed its aims in the following general resolution:

"The International Congress for Sexual Reform on a Scientific Basis appeals to the legislatures, the press, and the peoples of all countries, to help to create a new legal and social attitude—based on the knowledge which has been acquired from scientific research in sexual biology, psychology, and sociology—towards the sexual life of men and women."

At present the happiness of an enormous number of men and women is sacrificed to false sexual standards, to ignorance, and to intolerance. It is, therefore, urgently necessary that the many sexual problems (position of women, marriage, divorce, birth control, eugenics, fitness for marriage, the unmarried mother and the illegitimate child, prostitution, sexual abnormalities, sexual offences, sexual education) should be reexamined from a commonsense and unbiased standpoint and dealt with scientifically.

At this Congress, too, the chief points of the League's policy were formulated. These have undergone some verbal revision from time to time, but have remained essentially unchanged. They are:

- (1) Systematic sexual education.
- (2) Political, economic, and sexual equality of men and women.
- (3) Reform of the present marriage and divorce laws.
- (4) Control of conception, so that procreation may be undertaken only deliberately and with a due sense of responsibility. Provision of facilities for obtaining advice on contraception. Provision of facilities for sterilisation in suitable cases. Reform of the present laws governing abortion. Race betterment by the application of the knowledge of eugenics.
- (5) Protection of the unmarried mother and the illegitimate child.
- (6) Prevention of venereal disease and prostitution (The League advocates the

prevention of prostitution, not by the persecution of prostitutes, but by the removal of the economic causes leading to prostitution, and by other changes which will enable adults to find moderate gratification for their sexual hunger in more satisfactory forms of relationship).

- (7) A rational attitude towards sexually abnormal persons, and reform of the laws regarding sexual offences.

At the Copenhagen Congress, too, the League drew up its Constitution and emphasized its fundamental principles in the following words:

It must be emphasized that the WLSR does not confine itself to the *study* of sexual problems. Its primary object is to attain practical *reforms* for the benefit of humanity by the application of the knowledge derived from the study of these problems.

The WLSR does not set itself up in opposition to other organizations which have already done much valuable work in various branches of sexual reform (marriage reform, protection of motherhood, birth control, eugenics, homosexuality, abolition of licensed prostitution, prevention of venereal disease, sexual criminal law, sexual education). The WLSR, however, will not confine its activities to any one or more of these separate branches, but shall concern itself with human sexual life as a whole. It aims at establishing sexual ethics and sociology on a scientific, biological and psychological basis, instead of (as at present) on a theological basis.

We shall strive to attain our aim by appealing to the intellect, not to the emotions: and we shall carefully refrain from personal abuse of our opponents.

We can not recognize as eternally valid that which is prescribed merely by the custom of a particular period. We can recognize as eternally valid only that which is in agreement with what we learn from life and from love. All the main points of the League's policy above-mentioned have already been the subject of considerable discussion during the last fifteen years—discussion which has resulted in many important changes not only in Society's attitude towards these questions, but also in our

actual institutions. This period may be said to be one of "sexual crisis." The old morality, however, with its attendant terrible sexual starvation, still has the upper hand, and there are still innumerable victims of sexual prejudice and intolerance. But the spell has now been broken by scientific knowledge, and love may now develop more freely. "There must be no conflict between sexual hygiene and sexual ethics" (Forel).

In 1929, a very much larger Congress was held in London. This Congress (organized by Norman Haire and Dora Russell) aroused much public interest, and the English newspapers took a definite step forward in devoting considerable space to reports of the discussions. Invitations were received from Moscow and Vienna to hold the next Congress in those cities. The main resolutions passed by this Congress were the following:

I. Marriage and Divorce.

The present marriage laws of most countries are out of date and not in harmony with the social and economic conditions of the present era. They are harmful to the happiness and even to the life of a very great proportion of human beings.

The divorce laws are inspired by an attitude of revenge and possessive right; divorce is refused upon the most serious grounds, and the continuation of a marriage is even enforced against the will of both parties.

Children are at present divided into two categories, the legitimate and the illegitimate, and fewer rights, and frequently persecution, are the lot of the illegitimate.

This Congress sees in the marriage laws of Soviet Russia a first attempt to solve this highly important social question scientifically and in the interest of the common people.

The Congress makes the following demands:

The abolition of all disadvantages of children on account of the legal position of their natural parents, and equal economic support for children whether born in or out of wedlock.

Complete and actual equality of men and women through the abolition of

existing legal disadvantages; equal rights as to decision of place of domicile.

There should be full freedom to contract and to dissolve marriage, so that neither partner can be forced to remain in a relationship which he or she desires to terminate. Since marriage rests upon the common will of the parties, it ends with the cessation of their mutual agreement. Legislation should concern itself primarily with the protection of the children; in exceptional cases only should the discretion of the courts be applied to alleviate hardship for the economically weaker party.

Further, the legislator should consider in what way the legal code may without hardship be used to serve public health and eugenic purposes.

Marriage education centers should be sponsored by public authority, where free advice on all marital and contraceptive problems can be obtained by anyone who asks for it.

II. Sex and Censorship.

This Congress holds that obscenity and impropriety are matters too subjective and indefinite to serve as a basis for law. Human beings should be so educated as to be able to meet all kinds of knowledge and decide for themselves what they personally will avoid or reject as obscene. In literature and art judgments differ widely, and any form of censorship or subsequent prosecution leads to the condemnation of works of artistic or scientific importance. On these grounds we declare ourselves against all forms of censorship on sex subjects in literature, scientific publication, pictures, and other representations.

As a first step, we demand the removal of such censorship authority from the sole jurisdiction of magistrates; and for the defendant we demand the following rights: (1) To bring medical, psychological, sociological, and artistic expert testimony in his favour. (2) To appeal to a higher court and trial by jury, which is at present impossible in some countries.

III. Sex Education.

This Congress declares that no campaign for sexual emancipation is possible without sexual education of children and young people. Such education should not only enlighten the young as to scientific facts, but should awaken in each individual a sense of personal responsibility in regard to his or her sexual life and social relations.

IV. Abortion.

This Congress declares that since contraceptive methods are at present not sufficiently perfect nor widespread, many women are compelled to resort to artificial termination of pregnancy. In all countries except Soviet Russia, this act involves severe legal penalties. These, in fact, fall mainly upon women of the poorest classes, and do not prevent the practice of abortion, but ensure that it is done secretly, incompetently, and with danger to life and health.

We therefore call for the abolition of penalties for the mother and a revision of laws relating to abortion, so as to make it possible for a woman to obtain a termination of pregnancy by a qualified medical practitioner on economic, social, and eugenic grounds, as well as the medical indications permitted at present.

V. Birth Control.

This Congress declares that no child should be born of unwilling parents. With this aim in view, we advocate free access to knowledge of contraceptives. This involves: (1) Continued research into improving contraceptives. (2) The repeal of laws against contraception. (3) Provision of contraceptive advice by the Public Health Authorities through adequate scientific channels. By this means the individual will acquire the right of free choice.

VI. Prostitution and Venereal Disease.

This Third International Congress of the World League for Sexual Reform, held in London, September 1929, declares: The problem of dealing with

prostitution and venereal disease should be approached with science and sympathy and not with moral disapproval. No campaign against prostitutes themselves should be undertaken, but Society should afford them opportunity to earn their living in other ways. By means of better education of young people and adults, sexual starvation should be diminished and professional prostitution rendered unnecessary.

We should place venereal diseases on a level with other serious infectious diseases and not treat them with superstitious and moral horror. But in combating venereal disease we should avoid, as far as possible, penalties and compulsion, and primarily proceed by widespread facilities for instruction in prevention of infection and free treatment of all infected persons.

During 1930 a number of national branches began to organize their own work in the various countries, and the Fourth International Congress was held in Vienna. One of the notable features at this Congress was an exhibition of objects from Magnus Hirschfeld's Institute of Sexual Science (Berlin), which attracted a great deal of attention. Just before this Congress, Professor Schmerz of Graz had been indicted for the performance of sterilization operations, at the patients' own request, on the ground that the operation caused "grievous bodily harm" (*Körperverletzung*). The leading medical members of the Congress signed a joint letter putting forward the view that the operation could not rightly be considered as causing grievous bodily harm, and upholding Professor Schmerz's action. This letter proved of great importance and the proceedings against Professor Schmerz were dropped.

The Fifth International Congress was held at the University of Brünn, Czechoslovakia (1932). Since that date, economic, and to an even greater extent political, difficulties have hindered the activities of the League in many European countries. The advent of the Hitler régime in Germany brought a Nazi raid on the Institute of Sexual Science in Berlin, where the Central Offices of the League were housed; and the Nazis persecuted or imprisoned many of the leading figures in the League: some because they were Jews, and some because they were Liberals. At the "Burning of the Books" which followed the raid on the Institute (May 1933), volumes by Hirschfeld (Germany), Havelock Ellis (England), Forel (Switzerland), Freud (Austria), J. Leunbach (Denmark), Norman Haire (Eng-

land), Ben Lindsey (United States), and many other members and officials and supporters of the League, were—after uncomplimentary remarks about their authors had been made by the Master of Ceremonies—consigned to the flames.

The world-wide economic crisis, and political unrest, have prevented the holding of further Congresses from 1932 until the present date, but in many countries the educational work of the WLSR, in spreading sexual enlightenment, has gone on, and has been taken up by many people who would, perhaps, hesitate to declare their adherence to the WLSR itself. Thus, both directly and indirectly, the League is carrying on its work in countries as far apart as Scandinavia and Australia, Japan, Russia, France, and the United States.

In numbers the League's membership is not large. Probably no national section has exceeded the number of 500 attained by the English group in 1929. But even though the numbers are small, they include a large proportion of the important progressive leaders of thought in the various countries. The League is poor in financial resources, and can not hope at the present time to exert much direct influence on legislation.

It is the belief of this writer that the League's chief work lies in the field of education, particularly among the younger generation, so that gradually a new attitude towards sexual problems will make itself felt. Only when the public demand for reform of the laws relating to sex has arisen, will the legislators carry out these reforms. In most countries legislation now lags behind public opinion, and it is the great task of the World League for Sexual Reform to influence public opinion in the direction of sexual enlightenment.

N. H.

ZOOERESTIA. Sexual connection with an animal. Term devised by Krafft-Ebing from the Greek *zoon*, animal, and *erastes*, lover. Zooerestia is to be differentiated from Krafft-Ebing's *Zoophilia Erotica*, in which sexual excitement is caused by the stroking and fondling of animals without intercourse, and even without regard to their sex. The differentiation ceases in those cases in which the erotic zoophilia culminates in zooerestia.

ZWISCHENSTUFE, intermediacy. Magnus Hirschfeld's term for the in-betweens or homosexuals.

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